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Transcript Exhibit(s)

Docket #(s): RR-12635B-09-0075

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Arizona Corporation Commission

DOCKETED

JUL 22 2009

DOCKETED BY	<u>MM</u>
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Exhibit #: S1-S4, I-1

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AZ CORP COMMISSION  
DOCKET CONTROL

2009 JUL 22 P 2:54

RECEIVED

COMMISSIONERS  
KRISTIN K. MAYES-Chairman  
GARY PIERCE  
PAUL NEWMAN  
SANDRA D. KENNEDY  
BOB STUMP



RECEIVED ARIZONA CORPORATION COMMISSION

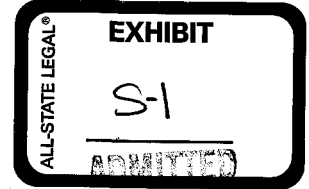
DAVID KABEK  
Director, Safety Division

ORIGINAL

2009 MAR 27 P 2:49

AZ CORP COMMISSION  
DOCKET CONTROL

### Staff Memorandum



To: THE COMMISSION

DOCKET NO. RR-02635B-09-0075

From: Safety Division

Date: March 27, 2009

RE: IN THE MATTER OF THE APPLICATION OF THE CITY OF FLAGSTAFF  
TO MODIFY AN EXISTING CROSSINGS OF THE BNSF RAILWAY  
COMPANY AT STEVES BOULEVARD (DOT NO. 025-099-J) AND  
FANNING DRIVE (DOT NO. 025-129-Y) IN THE CITY OF FLAGSTAFF,  
COCONINO COUNTY, ARIZONA.

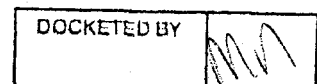
#### Background

On February 19, 2009 the City of Flagstaff ("City") filed with the Arizona Corporation Commission ("Commission") an application for approval to modify two existing at-grade railroad crossings of the BNSF Railway Company ("BNSF") by installing additional warning devices in the form of wayside horns, as part of the City's attempt to mitigate locomotive horn noise. The two crossings are at Steves Boulevard; DOT No. 025-099-J, and Fanning Drive, DOT No. 025-129-Y, both located within the City, in Coconino County, Arizona. Originally, the City had intended on including these two crossings as part of a proposed Quiet Zone, which would require the City to choose between two improvement options: (1) the use of roadway medians or (2) the use of four quadrant gates. The option of installing roadway medians was not feasible due to the close proximity of Route 66 and Industrial Drive to these crossings. As for the four quadrant gates, the cost of installation and maintenance were the major deterrents to that option. Therefore, the City chose to pursue the wayside horn warning devices in an attempt to mitigate the horn noise at these crossings.

On May 2, 2006, Staff, the Railroad and the City participated in diagnostic review of the proposed improvements at these crossings. All parties present were in agreement to the proposed improvements at Steves Boulevard and Fanning Drive. The following is a break down of the two crossings in this application, including information about the crossings that was provided to Staff by the City.

Arizona Corporation Commission  
**DOCKETED**

MAR 27 2009



### **Geographical Information**

Flagstaff, Arizona is located at the intersection of Interstate 17 and Interstate 40, and is the largest city in Northern Arizona. The City is also the regional center and county seat for Coconino County, the second largest county in the 48 contiguous states. The City of Flagstaff currently comprises of just over 64 square miles, nestled at the base of the San Francisco Peaks and surrounded by one of the largest pine forests on earth. Flagstaff drew its name from a very tall pine tree made into a flagpole in 1876 to celebrate our nation's centennial. At nearly 7,000 feet, Flagstaff is also one of the highest elevation cities in the United States. The City is a year-round Mecca for visitors and many Arizonans maintain second homes here.

Located on the east side of Flagstaff, Steves Boulevard and Fanning Drive have very similar characteristics. Both at-grade crossings connect Route 66 to Industrial Drive; two east-west roadways which parallel the railroad tracks. The distance between Route 66 and Industrial Drive is only 300 feet, which limits the options of improving the crossings. The railroad track location is approximately centered between the curb lines of the parallel roadways. (See Appendix "A")

### **Steves Boulevard**

The existing crossing is being modified as part of the City's efforts to reduce locomotive horn noise. Steves Boulevard is a two lane through street, which runs in a north-south direction with right and left turning lanes at Route 66 and Industrial Drive. Currently, the warning devices consist of cantilevers, automatic gates, flashing lights and automatic bells. The proposed upgrades include: installation of wayside horns, new sidewalk construction which will conform to all ADA (Americans with Disabilities Act) requirements and the installation of "No Train Horn" signs. The "No Train Horn" signs indicate to the public that the locomotive horn is not routinely sounded at the crossing. The proposed measures are consistent with wayside horns employed at similar at-grade crossings across the country. The estimated cost of the proposed railroad crossing upgrade is \$115,000.

Traffic data for Steves Boulevard was provided by the City. The most current data provided showed the Average Daily Traffic (ADT) to be 11,028 vehicles per day (vpd). No future traffic projections were provided by the City.

Commission Rail Safety Section records, as well as Federal Railroad Administration ("FRA") accident/incident records indicate one accident at this crossing. The accident occurred on 11/9/1985 as a result of an auto running through the downed crossing gate arm. No injuries or fatalities occurred in this accident. Records indicate the warning devices were reported to be working as intended at the time of the accident.

Alternative routes from this crossing are as follows; to the east .65 miles is Fanning Drive, an at-grade crossing, and to the west .54 miles, is 4<sup>th</sup> Street, a grade separated crossing.

### **Fanning Drive**

The existing crossing is being modified as part of the City's efforts to reduce locomotive horn noise. Fanning Drive is a two lane through street, which runs in a north-south direction with right and left turning lanes onto Route 66 and Industrial Drive. Currently the warning devices consist of cantilevers, gates, flashing lights and bells. The proposed upgrades include: installation of wayside horns, new sidewalk construction which will conform to all ADA requirements and the installation of "No Train Horn" signs. The proposed measures are consistent with wayside horns employed at similar at-grade crossings across the country. The estimated cost of the proposed railroad crossing upgrade is \$115,000.

Traffic data for Fanning Drive was provided by the City. The most current data provided showed the ADT to be 8,101 vpd. No future traffic projections were provided.

Commission Rail Safety Section records, as well as FRA accident/incident records indicate four accidents at this crossing with one injury. The first accident occurred on 8/21/1988 as a result of an auto running through the downed crossing gate. The second occurred on 9/29/2001 as a result of an auto stopping on the railroad tracks. The third accident occurred on 2/6/2003, also as a result of an auto stopping on the railroad tracks. A fourth accident occurred on 10/23/2006, when a tractor trailer did not clear the crossing and was struck by a train, resulting in one injury. Records indicate the warning devices were reported to be working as intended in all four accidents.

Alternative routes from this crossing are as follows; to the east .61 miles is Country Club Road, a grade separated crossing, and to the west is Steves Boulevard, .65 miles, an at grade crossing.

### **Train Data**

Data provided by the City regarding train movements through these crossings are as follows:

**Train Count:** 93 trains per day on two main tracks

**Train Speed:** 55 mph freight and passenger

**Thru Freight/Switching Moves:** There are thru freight moves as well as switching moves through these crossings. This is an Amtrak passenger route.

### **Wayside Horns**

Both of these crossings involve the installation of wayside horns. Wayside horns are an innovative railroad signaling device that significantly improves safety for motorists and pedestrians and dramatically reduces the amount of noise pollution created



by train horns along rail corridors in populated areas. Wayside horns are a stationary horn system activated by the railroad-highway grade crossing warning system. Wayside horns are mounted at the crossing, rather than on the locomotive, to deliver a longer, louder, more consistent audible warning to motorists and pedestrians while eliminating noise pollution in neighborhoods for more than 1/2 mile along the rail corridor.

The wayside horn sounds like a train horn because the tone modules in the horns were digitally recorded from an actual locomotive horn. After receiving the signal from the railroad's track circuit warning system, the horn mimics the train horn warning by cycling through the standard railroad whistle pattern until the train reaches the crossing. Once the train has entered the crossing, the wayside horn is silenced. A confirmation signal notifies the locomotive engineer that the wayside horn is functioning properly. When the locomotive engineer sees that the confirmation signal is flashing, he will not be required to sound his horn unless he detects an unsafe condition at the grade crossing. Coordination with the railroad operating company is essential since the wayside horn is directly connected to the railroad's crossing signal-warning system. The railroad operating company must issue instructions to their train crews regarding the sounding or non-sounding of the train's horn. The implementation of wayside horns at rail crossings does not establish a quiet zone. Currently, there are no rail crossings in Arizona that have wayside horns.

Wayside horns have been classified by the FHWA as a traffic control device for inclusion in the Manual on Uniform Traffic Control Devices (MUTCD). Under CFR Part 222.59 (a) (1), wayside horns may be used in lieu of a locomotive horn at any highway-rail grade crossing equipped with an active warning system consisting of, at a minimum, flashing lights and gates.

### **Creation of a Quiet Zone**

Within the City's application, the City explained that a "quiet zone" will be created at Beaver Street, San Francisco Street and Enterprise Avenue, but that no changes will be made to the warning devices, roadway configuration, or pavement markings that would require Commission approval.

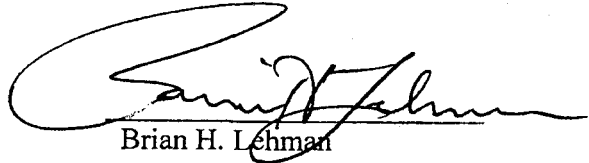
A quiet zone is a railroad grade crossing at which trains are prohibited from sounding their horns in order to decrease the noise level for nearby residential communities. The train horns can be silenced only when other safety measures compensate for the absence of the horns. The Federal Railroad Administration (FRA) train horn rule 49 CFR Parts 222 and 229, provides localities nationwide with the opportunity to establish quiet zones. The federal rule pre-empts all applicable state laws, regarding the sounding of locomotive horns at highway-rail grade crossings. To qualify, communities wishing to establish quiet zones must equip proposed grade crossings with adequate safety measures to overcome the decrease in safety created by silencing the train horns. The additional safety measures must be constructed at the community's own expense and must meet federal specifications. The federal rule also contains language which for the first time restricts the volume of train horns.

### **Staff Conclusions**

Having reviewed all applicable data, Staff generally supports the City's application. By installing wayside horns, and the "No Train Horn" signs at Steves Blvd. and Fanning Drive, Staff believes these modifications will provide adequate warning to the public of the approach of a train. Having said that, Staff believes that the measures proposed by the City will provide for the public's safety. Therefore, Staff recommends approval of the City's application.



Dave Raber



Brian H. Lehman



Original and thirteen (13) copies  
of the foregoing were filed this  
27th\_ day of March, 2009 with:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

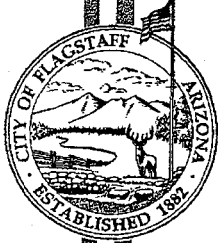
Copy of the foregoing mailed  
this 27th day of March, 2009 to:

Robert Travis, PE  
State Railroad Liaison  
Arizona Department of Transportation  
205 S 17th Ave, Room 357  
MD 618E  
Phoenix, AZ 85007

Randy Whitaker  
City of Flagstaff  
211 W. Aspen Ave.  
Flagstaff, Az. 86001

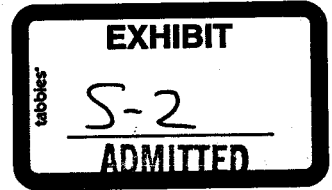
Melvin Thomas  
BNSF Railroad  
740 E. Carnegie Dr.  
San Bernardino, Ca. 92408

Tim Dalegowski  
Coconino County  
Public Works Department  
5600 E. Commerce Dr.  
Flagstaff, Az. 86004



# City of Flagstaff

Office of the City Attorney - Patricia J. Boomsma, City Attorney



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Flagstaff, Arizona 86001

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211 W. Aspen Avenue, 2<sup>nd</sup> Floor  
Fax (928) 913-3204

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DANA H. KJELLGREN  
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107 W. Aspen Avenue  
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LISA M. STANKOVICH, CHIEF PROSECUTOR  
RONALD KANWISCHER  
ROBERT W. BROWN  
JULIE LABENZ  
CONSUELO BRENNAN

May 20, 2009

Amanda Ho  
Attorney, Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, AZ 85007-2927

Re: Data Reply, City of Flagstaff  
Docket No. RR-02635B-09-0075

Dear Ms. Ho:

Please find enclosed the City of Flagstaff response to the Arizona Corporation Commission first set of staff data requests per your May 1, 2009 correspondence.

This response includes an allowance for our requested and approved time extension for submission.

Sincerely,

David Womochil  
Senior Assistant City Attorney

Enclosure

cc Randy Whitaker, Senior Project Manager, City of Flagstaff  
Mark Landsiedel, Community Improvement Director, City of Flagstaff  
Chris Watson, Safety Division, Arizona Corporation Commission, 1200 West Washington Street,  
Phoenix, Arizona 85007, [cwatson@azcc.gov](mailto:cwatson@azcc.gov)



**COMMISSIONERS**  
KRISTIN K. MAYES - Chairman  
GARY PIERCE  
PAUL NEWMAN  
SANDRA D. KENNEDY  
BOB STUMP



**MICHAEL P. KEARNS**  
Interim Executive Director

**ARIZONA CORPORATION COMMISSION**

May 1, 2009

*Via E-mail and United States Mail*

Randy Whitaker, Senior Project Manager  
Traffic Engineering  
City of Flagstaff  
City Hall  
211 West Aspen Avenue  
Flagstaff, Arizona 86001

Re: Staff's First Set of Data Requests to City of Flagstaff  
Docket No. RR-02635B-09-0075

Dear Mr. Whitaker:

Please treat this as Staff's First Set of Data Requests to City of Flagstaff in the above matter.

For purposes of this data request set, the words "City of Flagstaff," "Company," "you," and "your" refer to City of Flagstaff and any representative, including every person and/or entity acting with, under the control of, or on behalf of City of Flagstaff. For each answer, please identify by name, title, and address each person providing information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses.

Please respond within **ten** calendar days of your receipt of the copy of this letter. However, if you require additional time, please let us know.

***Please provide one hard copy as well as searchable PDF, DOC or EXCEL files (via email or electronic media) of the requested data directly to each of the following addressees via overnight delivery services to:***

- (1) Chris Watson, Safety Division, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, [cwatson@azcc.gov](mailto:cwatson@azcc.gov).
- (2) Amanda Ho, Attorney, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, [aho@azcc.gov](mailto:aho@azcc.gov).

Sincerely,

Amanda Ho  
Attorney, Legal Division  
(602) 542-3402

AH:klc  
Enclosure  
cc: David Womochil, Flagstaff City Attorney's Office

**ARIZONA CORPORATION COMMISSION  
STAFF'S FIRST SET OF DATA REQUESTS TO  
CITY OF FLAGSTAFF  
Docket No. RR-02635B-09-0075  
May 1, 2009**

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**Subject: All information responses should ONLY be provided in searchable PDF, DOC or EXCEL files via email or electronic media.**

**CH 1.1**       Based on a 4/24/2009 inspection, it was apparent that wayside horns such as the ones that the City is currently applying to the Commission for approval to install, have already been installed. Please state at whose direction the wayside horns were installed?

*Activation of wayside horns has not occurred at any location within the City limits of Flagstaff and is pending standard Arizona Corporation Commission process. City infrastructure in support of the wayside horns has been completed; however, BNSF signal equipment and associated infrastructure required for the signaling connectivity has not proceeded.*

*The associated City of Flagstaff infrastructure includes wayside horn poles and the cabinets on the poles which were installed per an agreement executed through the City of Flagstaff Council and 442-Construction company on December 16, 2008. This agreement is limited to City work as required by Federal Railroad Administration and the diagnostic team findings in support of the establishment of a quiet zone.*

**CH 1.2**       On what date(s) were the wayside horns installed?  
*City infrastructure for the wayside horns including poles and cabinets were installed April 6-18, 2009.*

**CH 1.3**       Was a contractor used to perform the installation of the wayside horns?  
*The City of Flagstaff executed an agreement with the 442-Construction company for installation of City infrastructure associated with the wayside horns.*

**CH 1.4**       Was there a BNSF flagman provided while the installation was being done?  
*The City of Flagstaff infrastructure (poles) was completed at a distance of 25 feet or greater from the existing tracks, for which regulations do not require a flagman. 442-Construction company, as monitored by the City staff, worked directly with the BNSF Rail Master during the installation phase of the poles.*

**CH 1.5**       Were any BNSF personnel present during the installation of the wayside horns?  
*The City of Flagstaff equipment that is associated with wayside horns was monitored by the City inspection staff. City inspection staff verified the wayside horn poles and cabinets were installed per construction documentation. The City and 442-construction company notified BNSF of City activity.*

**CH 1.6**       Who paid for the installation of the wayside horns?  
*The City of Flagstaff through an executed agreement with the 442-construction company is responsible for payment of work completed per construction documents. The City of Flagstaff*

**ARIZONA CORPORATION COMMISSION  
STAFF'S FIRST SET OF DATA REQUESTS TO  
CITY OF FLAGSTAFF**

**Docket No. RR-02635B-09-0075**

**May 1, 2009**

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**Subject:** All information responses should **ONLY** be provided in searchable PDF, DOC or EXCEL files via email or electronic media.

*will pay for remaining work to activate the wayside horns through subsequent signalization improvements following the Arizona Corporation Commission approval process.*

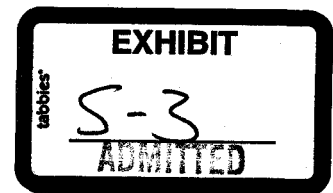
**CH 1.7**      Please explain why were the installations performed without first obtaining the Commission's approval?

*The City of Flagstaff in accordance with 29 CFR Part 222.43, worked with the Arizona Corporation Commission staff, as members of a recognized Federal Railroad Administration Diagnostic Team. The Diagnostic Team held meetings and site visits for each railroad crossing that is within the City's proposed quiet zone. The Diagnostic team discussed and weighed various safety measures as they applied toward creating a quiet zone within the City limits of Flagstaff.*

*A Notice of Intent which included the 60% design drawings was sent to the Arizona Corporation Commission on March 14, 2008 for the establishment of the City of Flagstaff quiet zone. Per 29 CFR Part 222.43, a 60-day comment period was followed by the City of Flagstaff after which the City did not receive comments from the Arizona Corporation Commission. However, comments were received from BNSF and their concerns were addressed in the final quiet zone designs. These final design documents incorporated the required safety measures and were acted on by the City of Flagstaff Council. Upon receipt of the design documents the Council approved proceeding with the advertisement, Award of Contract and the issuance of a Notice-To-Proceed to 442-Construction company on January 21, 2009.*

*During the week of February 9, 2009 the City was contacted by the Arizona Corporation Commission Phoenix office and notified that the connection to existing signal equipment at Steves and Fanning will require approval by the Arizona Corporation Commission for this portion of the work. The City immediately stopped all work related to signal activation and proceeded only with completing non-signaling City related infrastructure. The City and BNSF are awaiting Arizona Corporation Commission approval to address interconnectivity of the wayside horns with signaling equipment that will allow the City to establish the quiet zone.*





CITY OF FLAGSTAFF  
City Attorney's Office  
David A. Womochil (015591)  
211 West Aspen Avenue  
Flagstaff, Arizona 86001  
(928) 779-7680

**BEFORE THE ARIZONA CORPORATION COMMISSION**

Commissioners

KRISTIN K. MAYES, Chairman  
GARY PIERCE  
PAUL NEWMAN  
SANDRA D. KENNEDY  
BOB STUMP

IN THE MATTER OF THE APPLICATION OF )	DOCKET NO.
THE CITY OF FLAGSTAFF TO UPGRADE )	RR-02635B-09-0075
EXISTING RAILROAD CROSSINGS OF THE )	
BNSF RAILWAY COMPANY AT STEVES )	<b>APPLICANT'S</b>
BOULEVARD AND FANNING DRIVE IN THE )	<b>RESPONSE TO</b>
CITY OF FLAGSTAFF, COCONINO COUNTY, )	<b>STAFF'S SECOND</b>
ARIZONA, DOT CROSSING NOS. 025099J )	<b>SET OF DATA</b>
AND 025129Y. )	<b>REQUESTS</b>
_____ )	

The City of Flagstaff ("City") hereby submits its Response to Commission Staff's June 19, 2009 Second Set of Data Requests. Information forming the basis for the responses below was provided by the following persons:

Randy Whitaker, Project Manager  
City of Flagstaff  
211 West Aspen Avenue  
Flagstaff, AZ 86001

Rick Barrett, City Engineer  
City of Flagstaff  
211 West Aspen Avenue  
Flagstaff, AZ 86001

**CW 2.1      Please confirm if the wayside horns at Steves Boulevard and Fanning Drive have been removed pending Commission approval.**

The City has removed the wayside horns at Steves Boulevard and Fanning Drive pending approval by the Commission.

**CW 2.2      On what date were the wayside horns removed?**

City staff removed the wayside horns on May 15, 2009.

**CW 2.3      Were BNSF personnel notified of the original installation of the wayside horns? Please identify what personnel were so notified and when. Were BNSF personnel notified of the removal of the wayside horns? Please identify what BNSF personnel were so notified and when. Was BNSF approval granted for entry onto BNSF property to perform the installation and/or removal? Please provide written documentation of any such BNSF approval(s).**

The wayside horns are part of the City's quiet zone project. BNSF personnel participated as a member of the Diagnostic Team that reviewed the plans associated with the quiet zone. However, the City did not provide BNSF personnel separate notification for each specific aspect of the project. Various BNSF signal field personnel were involved in determining the location of the wayside horns. Attached is a copy of the Wayside Horn Agreement between the City of Flagstaff and BNSF.

**CW 2.4      Were BNSF personnel provided or requested by the City to be present for the installation? Please identify any BNSF personnel that were provided. Were BNSF personnel provided or requested by the City to be present for the removal? Please identify any BNSF personnel that were provided.**

As indicated in the City's response to CW 2.3 above, BNSF personnel participated in the Diagnostic Team and were aware of the specific plans related to the City of Flagstaff's implementation of its quiet zone. However, the City of Flagstaff is responsible for the installation, operation, and maintenance of the wayside horns. BNSF personnel were not required to participate in the actual installation of the wayside horns and were not present. If Commission approval is granted, BNSF personnel will be involved in the connection of the horns to the existing signal equipment.

**CW 2.5      While the wayside horns were in place, please describe in detail what measures were taken to make the traveling public aware that the wayside horns were not operational.**

There has not been any indication that the public was aware that the horns were in place. The horns were located approximately twenty (20) feet from the existing signal equipment, and there was no signage, lights, or other markers identifying or otherwise drawing attention to the horns. No signage was placed to indicate any change in the existing signal equipment. Furthermore, it was the City's intention to cover the wayside horns and indicators so they would not be visible until final Commission approval was obtained, and then remove the covers at the end of the thirty (30) day establishment period. The City was in the process of covering the equipment when the decision was

made to remove the wayside horns completely. In addition, the trains have continued blowing their horns in the same manner as before. The public has been notified through normal means, including City Council meetings, that the City is establishing a quiet zone, that there will be a notice of establishment period, and that the quiet zone will not be effective until after that time period elapses.

**CW 2.6      While the wayside horns were in place, please describe in detail what measures were taken to make the BNSF train operators aware that the wayside horns were not operational.**

City staff did not maintain direct contact with BNSF train operators concerning the status of the wayside horn installation process. However, it is City staff's understanding that the BNSF signal and operation divisions were aware that the wayside horns did not have power and that the horns were not connected to the existing signal equipment. As explained above, the City had intended to cover the wayside horns and indicators so that they would not be visible until final Commission approval was obtained.

Respectfully submitted this 1st day of July, 2009 by:



David Womochil  
Senior Assistant City Attorney  
City of Flagstaff

Original and thirteen (13) copies of the foregoing were mailed this \_\_\_\_ day of July, 2009, first class postage prepaid, to:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, AZ 85007

Copies of the foregoing mailed this \_\_\_\_ day of July, 2009 to:

Mark Bolton  
Fennemore Craig  
3003 North Central Avenue, Suite 2600  
Phoenix, AZ 85012  
Attorney for BNSF Railway Company

Randy Whitaker, Project Manager  
City of Flagstaff  
211 West Aspen Avenue  
Flagstaff, AZ 86001

Melvin V. Thomas, Manager Public Projects  
BNSF Railway Company  
740 East Carnegie Drive  
San Bernardino, CA 92408-3571

Robert Travis, PE, State Railroad Liaison  
Utilities & Railroad Engineering Section  
Arizona Dept. of Transportation  
205 South 17<sup>th</sup> Avenue, Mail Drop 618E  
Phoenix, AZ 85007

Traffic Records Section  
Arizona Dept. of Transportation  
206 South 17<sup>th</sup> Avenue, Mail Drop 064R  
Phoenix, AZ 85007

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Arizona Corporation Commission  
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Phoenix, AZ 85007

Brian Lehman, Chief  
Railroad Safety Section  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, AZ 85007

Arizona Reporting Service, Inc.  
2200 North Central Avenue, Suite 502  
Phoenix, AZ 85004-1481

Lyn Farmer  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, AZ 85007-2927

Harry Steelman, Project Manager  
Amtrak  
810 N. Alameda Street  
Los Angeles, CA 90012

By: \_\_\_\_\_

## WAYSIDE HORN AGREEMENT

THIS WAYSIDE HORN AGREEMENT (hereinafter called, this "Agreement"), is entered into effective as of December 1, 2008, by and between BNSF Railway Company, a Delaware Corporation (hereinafter called, "BNSF"), and the City of Flagstaff, a municipal corporation, (hereinafter called, the "Agency").

### WITNESSETH

WHEREAS, BNSF has grade crossings warning devices located at the intersections of Steves Boulevard and Fanning Drive, as indicated on Exhibit "A" attached hereto and made a part hereof; and

WHEREAS, the Agency is installing within the BNSF right-of-way property its automated horn system pursuant to the requirements of 49 CFR Part 222, (hereinafter called, "Wayside Horn System") with the existing automatic grade crossing warning devices shown on Exhibit "A" subject to the mutual covenants contained in this Agreement;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and agreements of the parties contained herein, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

### AGREEMENT

#### 1. PURPOSE

The purpose of this Agreement is as follows: provide for the ownership, installation and maintenance by Agency or its contractor of the Wayside Horn System and other related improvements at the Steves Blvd (DOT #025099J) and Fanning Drive (DOT #025129Y) at-grade crossings.

#### 2. SCOPE OF WORK

- a. The Agency must provide BNSF in writing with the total preempt cycle time required from the start of the preempt cycle of Wayside Horn until the arrival of the train at the highway-rail crossing.
- b. BNSF will provide an interface box with contact terminals, at Agency's expense on the side of the railroad instrument cabin.
- c. Agency or its contractor will place all necessary cable and conduit and horn confirmation signage ("Confirmation X") on Railroad property in accordance with Exhibit "A", attached to and made a part of this Agreement.
- d. The Agency or its contractor will connect the Wayside Horn System control signals to the contact terminals in the interface box including all necessary cable and conduit.
- e. ~~BNSF will provide flagging services, at Agency's sole expense, necessary to protect BNSF train operations or BNSF property as set forth in more detail on Exhibit "C" attached to and made a part of this Agreement.~~
- f. The Agency or its contractor must install the new Wayside Horn System.
- g. An estimate of the actual costs for BNSF work (excluding flagging, which will depend upon contractor's activities) is shown on Exhibit "B" attached to and made a part of this Agreement. In the event installation of the improvements has not commenced within six (6) months following the effective date of this Agreement, BNSF may, in its sole and absolute discretion, revise the cost estimates set forth on Exhibit B. If the cost estimates are revised, the revised cost estimates will become a part of this Agreement as though originally set forth herein. Any item of work incidental to the items listed on Exhibit B not specifically mentioned therein may be

included as a part of this Agreement upon written approval of the Agency, which approval will not be unreasonably withheld.

- h. The Agency must pay BNSF for the actual costs of any work performed by BNSF under this Agreement within thirty (30) days of the date of the invoice for such work, including flagging costs. During the construction of the improvements, BNSF may send Agency progressive invoices detailing the costs of the railroad work performed by BNSF under this Agreement. Upon completion of the improvements and all associated work, BNSF will send Agency a detailed invoice of final costs including flagging costs, segregated as to labor and materials for each item in the recapitulation shown on Exhibit B. Agency must pay the final invoice within ninety (90) days of the date of the final invoice. BNSF will assess a finance charge of .033% per day (12% per annum) on any unpaid sums or other charges due under this Agreement which are past our credit terms. The finance charge continues to accrue daily until the date payment is received by BNSF, not the date payment is made or the date postmarked on the payment. ~~Finance charges will be assessed on delinquent sums and other charges as of the end of the month and will be reduced by amounts in dispute and any unposted payments received by the month's end. Finance charges will be noted on invoices sent to Agency under this section.~~

### 3. CONSTRUCTION AND MAINTENANCE

- a. BNSF will operate and maintain, at its expense, the necessary relays and the other materials required to preempt the Wayside Horn System with the grade crossing warning devices.
- b. BNSF will operate and maintain, at its expense, the grade crossing warning devices up to the contact terminals in the interface box.
- c. The Agency or its contractor must, at the Agency's expense, install the Way-Side Horn System up to and including connection to the contact terminals in the interface box including all necessary cable and conduit.
- d. Following installation of the Wayside Horn System, the Agency will own, operate and maintain, at its expense, the Wayside Horn System up to and including connection to the contact terminals in the in the interface box including all necessary cable and conduit. When any such maintenance requires BNSF flagging or changes to BNSF contact terminals, Agency or its designate shall pay BNSF for all costs associated with such work
- e. The Agency shall maintain the Wayside Horn System in a good and operative condition and in accordance with all applicable laws and regulations, including without limitation Appendix E of 49 CFR Part 222.
- f. Through this Agreement, BNSF does not waive any rights it may have under existing federal law to sound the locomotive horn in case of emergency, when the Wayside Horn System is malfunctioning, when active grade crossing warning devices have malfunctioned, when roadway workers are present or when grade crossing warning systems are temporarily out of service during inspection, maintenance, or testing of the system or as is otherwise necessary in the sole opinion of BNSF.
- g. In the event Agency defaults on any of its obligations hereunder, including without limitation, Agency's obligation to maintain the Wayside Horn System in good and operative condition, BNSF, may, at its option, remove the Wayside Horn System at the sole cost and expense of Agency. Upon removal of the Wayside Horn System, BNSF shall resume sounding the locomotive horn at the Steves Blvd (DOT #025099J) and the Fanning Drive (DOT #025129Y) at-grade crossings.

### 4. PROTECTION OF UNDERGROUND SYSTEMS

- a. Agency and its contractor is placed on notice that fiber optic, communication and other cable lines and systems (collectively, the "Lines") owned by various telecommunications or utility companies may be buried on BNSF's property or right-of-way. The Agency or its contractor must contact appropriate personnel to have the Lines located and make arrangements with the

owner of the Lines regarding protective measures that must be followed prior to the commencement of any work on BNSF's property. The Agency or its contractor will be responsible for contacting BNSF's Engineering Representative (Richard Barnitz at 505-767-6826) and the telecommunications or utility companies and notifying them of any work that may damage these Lines or facilities and/or interfere with their service. The Agency or its contractor must also mark all Lines in order to verify their locations. Agency or its contractor must also use all reasonable methods when working in the BNSF right-of-way or on BNSF property to determine if any other Lines (fiber optic, cable, communication or otherwise) may exist.

- b. Failure to mark or identify Lines will be sufficient cause for BNSF's Engineering Representative to stop construction at no cost to BNSF until these items are completed.
- c. In addition to the liability terms contained elsewhere in this Agreement and to the fullest extent provided by law, Agency and its contractor hereby indemnify, defend and hold harmless BNSF for, from and against all cost, liability, and expense whatsoever (including, without limitation, attorney's fees and court costs and expenses) arising out of or in any way contributed to by any act or omission of Agency or its contractor, subcontractors, agents and/or employees that cause or in any way or degree contribute to: (1) any damage to or destruction of any Lines on BNSF's property or within BNSF's right-of-way; (2) any injury to or death of any person employed by or on behalf of (a) any telecommunications or utility company, (b) Agency's contractor or subcontractors, or (c) Agency, and (3) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of such telecommunications or utility company(ies). **THE LIABILITY ASSUMED BY AGENCY OR ITS CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DAMAGE, DESTRUCTION, INJURY, DEATH, CAUSE OF ACTION OR CLAIM WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF BNSF, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR GROSS NEGLIGENCE OF BNSF.**
- d. Agency or its contractor will be responsible for the rearrangement of any facilities or Lines determined to interfere with the installation or construction of the improvements. Agency and/or its Contractor must cooperate fully with any telecommunications or utility company(ies) in performing such rearrangements.

5.

#### INDEMNIFICATION

Agency hereby indemnifies, defends and holds harmless BNSF for, from and against any and all claims, suits, losses, damages, costs and expenses for injury to or death to third parties or BNSF's officers and employees, and for loss and damage to property belonging to any third parties (including damage to the property of BNSF officers and employees), to the extent caused by the negligence of the Agency or any of its employees, agents or contractors. The Agency also releases BNSF from and waives any claims for injury or damage to the Agency's highway traffic control signals, the Wayside Horn System, or other equipment which may occur as a result of any of the work provided for in this Agreement or the operation or the maintenance thereafter of any of the Agency's highway Wayside Horn System, the traffic control signals, cables, connections at and about the grade crossing.

- b. To the fullest extent permitted by law, Agency hereby releases, indemnifies, defends and holds harmless BNSF and BNSF's affiliated companies, partners, successors, assigns, legal representatives, officers, directors, employees and agents for, from and against any and all claims, suits, liabilities, losses, damages, costs and expenses (including, without limitation, attorneys fees and court costs) for injury to or death to Agency employees, agents or representatives arising out of, resulting from or related to any act or omission of Agency or any work performed on or about BNSF's property or right-of-way, including without limitation, the installation and maintenance of the Wayside Horn System by the Agency. **THE LIABILITY ASSUMED BY THE AGENCY IN THIS PROVISION WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILROAD, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT**

**TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE GROSS NEGLIGENCE OR INTENTIONAL MISCONDUCT OF BNSF.**

- c. "Agency further agrees to release, indemnify and hold harmless BNSF for damages resulting from any labor claims under BNSF's collective bargaining agreements (and including attorneys' fees and court costs and expenses, if the subject of litigation) brought as a consequence of Agency's installation or maintenance of the Horn System, or otherwise from implementation of the terms of this Agreement."
- d. The Agency further agrees, at its expense, in the name and on behalf of BNSF, that it will adjust and settle any claims made against BNSF and will appear and defend any suits or actions at law or in equity brought against BNSF on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by the Agency under this Agreement for which BNSF is alleged to be liable. BNSF will give notice to the Agency in writing of the receipt of pendency of such claims and thereupon the Agency must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against BNSF, BNSF may forward the summons and complaint or process in connection therewith to the Agency, and the Agency must defend, adjust or settle such suits and protect, indemnify, and save harmless BNSF from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

**6. AGENCY CONTRACTOR REQUIREMENTS**

- a. While on or about BNSF property, Agency and its contractors must fully comply with BNSF's "Contractor Requirements" set forth in Exhibit "C" attached to and made a part of this Agreement. The "Contractor Requirements" include clearance requirements and personal protective equipment requirements. Agency and its contractors will be responsible for becoming familiar with BNSF's "Contractor Requirements". Prior to entering BNSF property, Agency's Contractor must execute Exhibit C-1 attached to and made a part of this Agreement.
- b. Prior to entering BNSF property, each person providing labor, material, supervision or services connected with the work to be performed on or about BNSF property must complete the safety training program (hereinafter called "BNSF Contractor Safety Orientation") at the following internet website: "contractororientation.com". Agency must ensure that each of its contractors, employees, subcontractors, agents or invitees completes the BNSF Contractor Safety Orientation before any work is performed under this Agreement. Additionally, Agency must ensure that each and every contractor, employee, subcontractor, agent or invitee possesses a card certifying completion of the BNSF Contractor Safety Orientation prior to entering BNSF property. Agency must renew the BNSF Contractor Safety Orientation annually.
- c. Prior to entering BNSF property, Agency or its contractors must prepare and implement a safety action plan acceptable to BNSF. Agency must audit compliance with the plan during the course of Agency's work. A copy of the plan and audit results must be kept at the work site and will be available for inspection by BNSF at all reasonable times.

**7. INSURANCE**

Agency and/or its contractor must, at Agency and contractor's sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

- a. Commercial General Liability insurance. This insurance must contain broad form contractual liability with a combined single limit of a minimum of \$2,000,000 each occurrence and an aggregate limit of at least \$4,000,000. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to the following:
- ◆ Bodily Injury and Property Damage
  - ◆ Personal Injury and Advertising Injury
  - ◆ Fire legal liability
  - ◆ Products and completed operations



This policy must also contain the following endorsements, which must be indicated on the certificate of insurance:

- ◆ It is agreed that any workers' compensation exclusion does not apply to *Railroad* payments related to the Federal Employers Liability Act or a *Railroad* Wage Continuation Program or similar programs and any payments made are deemed not to be either payments made or obligations assumed under any Workers Compensation, disability benefits, or unemployment compensation law or similar law.
- ◆ The definition of insured contract must be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- ◆ Any exclusions related to the explosion, collapse and underground hazards must be removed.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy.

- b. Business Automobile Insurance. This insurance must contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:
  - ◆ Bodily injury and property damage
  - ◆ Any and all vehicles owned, used or hired
- c. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:
  - ◆ Statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
  - ◆ Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.
- d. Railroad Protective Liability insurance naming only the *Railroad* as the Insured with coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate. The policy must be issued on a standard ISO form CG 00 35 10 93 and include the following:
  - ◆ Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
  - ◆ Endorsed to include the Limited Seepage and Pollution Endorsement.
  - ◆ Endorsed to remove any exclusion for punitive damages.
  - ◆ No other endorsements restricting coverage may be added.
  - ◆ The original policy must be provided to the *Railroad* prior to performing any work or services under this Agreement
- e. Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certification of insurance must reflect that no exclusion exists.

Agency agrees to waive its right of recovery against Railroad for all claims and suits against Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits. The certificate of insurance must reflect the waiver of subrogation endorsement. Agency further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under Agency's care, custody or control.

Agency's insurance policies through policy endorsement, must include wording which states that the policy will be primary and non-contributing with respect to any insurance carried by Railroad. The certificate of insurance must reflect that the above wording is included in evidenced policies.

All policy(ies) required above (excluding Workers Compensation and if applicable, Railroad Protective) must include a severability of interest endorsement and Railroad must be named as an additional insured with respect to work performed under this agreement. Severability of interest and naming Railroad as additional insured must be indicated on the certificate of insurance.

Agency is not allowed to self-insure without the prior written consent of Railroad. If granted by Railroad, any deductible, self-insured retention retention or other financial responsibility for claims must be covered directly by Agency in lieu of insurance. Any and all Railroad liabilities that would otherwise, in accordance with the provisions of this *Agreement*, be covered by Agency's insurance will be covered as if Agency elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the Work, Agency must furnish to *Railroad* an acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments and referencing the contract audit/folder number if available. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify *Railroad* in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. Upon request from *Railroad*, a certified duplicate original of any required policy must be furnished.

**Ebix BPO**  
PO Box 12010-BN  
Hemet, CA 92546-8010  
Fax number: 951-766-2299

Any insurance policy must be written by a reputable insurance company acceptable to *Railroad* or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

Agency represents that this *Agreement* has been thoroughly reviewed by Agency's insurance agent(s)/broker(s), who have been instructed by Agency to procure the insurance coverage required by this *Agreement*. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above. The fact that insurance (including without limitation, self-insurance) is obtained by Agency will not be deemed to release or diminish the liability of Agency including, without limitation, liability under the indemnity provisions of this *Agreement*. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage."

If any portion of the operation is to be subcontracted by Agency, Agency must require that the subcontractor provide and maintain the insurance coverages set forth herein, naming *Railroad* as an additional insured, and requiring that the subcontractor release, defend and indemnify *Railroad* to the same extent and under the same terms and conditions as Agency is required to release, defend and indemnify *Railroad* herein.

Failure to provide evidence as required by this section will entitle, but not require, *Railroad* to terminate this *Agreement* immediately. Acceptance of a certificate that does not comply with this section will not operate as a waiver of Agency's obligations hereunder.

For purposes of this section, *Railroad* means "Burlington Northern Santa Fe Corporation", "BNSF Railway Company" and the subsidiaries, successors, assigns and affiliates of each.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

BNSF RAILWAY COMPANY

By: 

Printed Name: Melvin Thomas

Title: Manager Public Projects

CITY OF FLAGSTAFF

By: 

Printed Name: Kevin Burke

Title: City Manager

ATTEST:

Laura Matthews for  
CITY CLERK

APPROVED AS TO FORM:

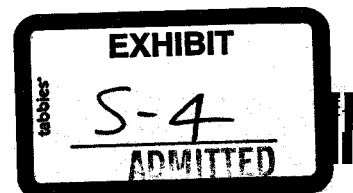
David Womack for  
CITY ATTORNEY

COMMISSIONERS  
KRISTIN K. MAYES-CHAIRMAN  
GARY PIERCE  
PAUL NEWMAN  
SANDRA D. KENNEDY  
BOB STUMP



ARIZONA CORPORATION COMMISSION

RR-026358-09-007



ORIGINAL

MEMORANDUM

TO: Chairman Kristin K. Mayes  
Commissioner Gary Pierce  
Commissioner Paul Newman  
Commissioner Sandra D. Kennedy  
Commissioner Bob Stump

FROM: Safety Division

DATE: May 21, 2009

RE: **IN THE MATTER OF BNSF RAILROAD CROSSINGS IN FLAGSTAFF AT  
STEVES BOULEVARD AND FANNING DRIVE**

Dear Commissioners:

Recently, it has come to Arizona Corporation Commission ("Commission") Railroad Safety Section Staff's ("Staff") attention that modifications were made to two BNSF railroad crossings within the City of Flagstaff. The crossings at Steves Boulevard and Fanning Drive are both subject to an application by the City of Flagstaff for the installation of wayside horns. As of May 1, 2009, the wayside horns appear to have already been installed at both crossings as the attached photographs indicate. As the application has not been approved yet, authority to install the wayside horns has not been granted by the Commission yet.

In order to fully develop and evaluate this new information, Staff requested a continuance of the matter and has issued new data requests. Based on informal discussions between Staff and staff of the City of Flagstaff, it appears that the unapproved installation was at the direction of the City of Flagstaff. It is Staff's understanding, however, that the installed devices are not presently functioning and have not been connected with the respective crossings' signal circuitry. On May 20, Staff learned that the City of Flagstaff removed the wayside horns until Commission approval is granted. Staff will continue to investigate the matter and will provide recommendations as appropriate.

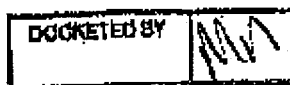
Should you have any questions or comments on the information provided, please do not hesitate to contact Brian Lehman at (602) 262-5601.

  
Brian Lehman, Supervisor  
Rail Safety Division

BL:yw  
Attachment: Photos

Arizona Corporation Commission  
**DOCKETED**

MAY 22 2009



AT CORP COMMISSION  
DOCKET CONTROL

2009 MAY 22 P 2:43

RECEIVED



















EXHIBIT

I-1  
~~ADMITTED~~

**Docket # RR-02655B-09-0075**

**CONTENTS:**

THIS COVER PAGE – 1 PAGE

PROOF OF DELIVERY – 2 PAGES

PUBLIC COMMENT FORM – 1 PAGE

COMMENTS & ONE PAGE NEWS ARTICLE – 16 PAGES

APPENDIX A – 19 PAGES

APPENDIX C – 8 PAGES

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On May 6<sup>th</sup>, 2009 the Arizona Corporation Commission ordered a continuance on the hearing regarding Docket # RR-02635B-09-0075 to allow its staff and all interested parties time to collect and present additional information so the Commission can intelligently rule on the application for the approval of the installation of Wayside Horns at crossing #025099J, (Steves Boulevard) and crossing #025129Y, (Fanning Drive) and in essence the approval of the entire Quiet Zone in Flagstaff, Arizona.

Being a long term resident of Flagstaff, from July 1960 to September 1989, returning to Flagstaff in August 1992 to the present; I feel this issue concerns me and many other residents. I have questioned and studied many aspects of this project over the past two years. I have gathered and examined countless documents through the Flagstaff City Clerk's office and internet. I have interviewed face to face and over the telephone a plethora of Government employees both Federal and State, Flagstaff City Officials, Flagstaff City Staff and numerous private citizens with expertise in construction methods, safety principles, government budgets and other related fields.

I submit that the implementation of the proposed crossing modifications and subsequent approval of the proposed Flagstaff Quiet Zone will have a severely negative outcome on members and visitors of this community.

The Procedural Order issued May 6<sup>th</sup>, by the Arizona Corporation Commission asks very specific questions and requests additional information to support the answers given. This document sequentially offers answers and supporting documentation to the two questions I've researched and feel qualified to answer regarding the crossing changes and crossing safety.

**1. What changes are being made at these three crossings? (Beaver Street, San Francisco Street and Enterprise Avenue). – Page 3, Line 2 of the May 6, 2009 Procedural Order.**

In the application submitted by the City of Flagstaff to the Commission dated February 17, 2009, the City states, "There are other crossings in the Quiet Zone, (referring to Beaver Street, San Francisco Street and Enterprise Avenue) but no changes will be made to the warning devices, roadway configuration or pavement markings at these three crossings."<sup>1</sup>

That statement is factual but not accurate in regards to safety. While it is factual to state that there will be no **physical** changes made at these three crossings; it is also factual and accurate to state that a drastic **functional** change is being made at these three crossings. The change is an "**important safety feature**"<sup>2</sup>, is being eliminated from the crossing, i.e. the sounding of a warning horn. Studies by the [Federal Railroad Administration] FRA and others have found that the sounding of train horns at intersections reduces the risk of grade crossing accidents and that banning the sounding of horns at grade crossings increases the risk of accidents"<sup>3</sup>

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<sup>1</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, "New Application to Arizona Corporation Commission for Additional Warning Devices," February 17, 2009, **Appendix A.1a**

<sup>2</sup> David Randall Peterman, Analyst in Transportation Resources, Science, and Industry Division, CRS REPORT FOR CONGRESS, "The Federal Railroad Administration's Train Horn Rule", April 20, 2007, p.3

<sup>3</sup> Ibid.

The other physical change is the addition of pedestrian sidewalk "arches" on the northwest and northeast side of the Beaver Street crossing; the addition of pedestrian sidewalk "arches", (See page 4) on the southwest and southeast side of the San Francisco Street crossing. All three crossings, including Enterprise Avenue have had ADA pads installed across the sidewalks.

- 2. If trains cease sounding their horns at these crossings, (Beaver Street, San Francisco Street and Enterprise Avenue), will the crossings be safe for the Public with their existing safety equipment... If so, what makes them safe, how was that determined, and by whom? If not, why not? – Page 3, Lines 3-4 of the May 6, 2009 Procedural Order.**

The answer to the above stated question is NO!

Although the sounding of train horns, (at these two high pedestrian traffic intersections), reduces the risk of grade crossing accidents,"<sup>4</sup> ; The FRA regulations allow the creation of a quiet zone and the addition of SSM's, (Supplemental Safety Measures), which the FRA feel adequately substitutes for the absence of the Locomotive Warning Horn<sup>5</sup>. These same FRA regulations require the formation of a Diagnostic Team composed of "a group of knowledgeable representatives"<sup>6</sup> to evaluate each crossing within the proposed Quiet Zone. The Diagnostic Team's function is to inspect, evaluate and formulate safety recommendations as guidelines for train horn substitutes, (SSM's, ASM's, or Wayside Horns) and advise the Municipality i.e. the City of Flagstaff which design to follow.<sup>7</sup>

The initial Flagstaff Quiet Zone Diagnostic Team had a representative from Gannett Fleming<sup>8</sup>, initially hired in 2004. According to City documents, Gannett Fleming was one of "a very limited number of design firms" with the ability and experience to design a "very specialized" City wide Quiet Zone<sup>9</sup>; and the only other firm with the expertise to design a Quiet Zone in the whole State of Arizona was the company, Kirkham Michael, who declined to submit a proposal. Two other design groups responded with a proposal but were not considered by the City of Flagstaff due to lack of experience designing Quiet Zones.<sup>10</sup> In summary, according to Flagstaff City documents, there were only two design companies in the entire State with the specialized knowledge to design the proposed Quiet Zone.

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<sup>4</sup> David Randall Peterman, Analyst in Transportation resources, Science, and Industry Division, CRS REPORT FOR CONGRESS, "The Federal Railroad Administration's Train Horn Rule", April 20, 2007, p.3

<sup>5</sup> Federal Register, PART IV DEPARTMENT OF TRANSPORTATION, Federal Railroad Administration, "49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule", August 17, 2006, pp. 47654-56.

<sup>6</sup> Ibid., p. 47664

<sup>7</sup> Ibid., p. 47665

<sup>8</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, rev. of Quiet Zone/Wayside Horns Update December 2006, Revised 1-22-2007 by Gannett Fleming, New Application to Arizona Corporation Commission for Additional Warning Devices, (February 17, 2009), p.2. **APPENDIX A.1b**

<sup>9</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, "City of Flagstaff Staff Summary Report", January 11, 2006, P.2. **APPENDIX A.2a-2c**

<sup>10</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, "Memorandum, RE: Quiet Zone RSOQ", September 7, 2005. **APPENDIX A.3**

This led to a justification by the Flagstaff City Staff for the 2005 bid advertisement only being published in the local City and State newspapers<sup>11</sup> and not a specialized publication like the Associated General Contractors Journal.

The Quiet Zone project beginning in 2004 was delayed from 2006 to 2007. During that delay several members of the Diagnostic Team left the project and were unavailable to offer any further input regarding safety design to the project. The City of Flagstaff decided to go forward with one of five different designs, (Scenario D), a design not recommended by the Diagnostic Team.<sup>12</sup> In a June 29, 2007 letter to the City of Flagstaff, written by Gannett Fleming's new project manager and signal manager, the top officials at the Phoenix office, "expressed concerns" to the City Staff regarding the change of plan from the initial recommended Scenarios A or B, to the newly enacted Scenario D, presumably since as of July 19, 2007, Gannett Fleming no longer had the qualified staff to design the Quiet Zones.<sup>13</sup>

On August 7, 2007 the contract between Gannett Fleming and The City of Flagstaff was terminated and all future design work was issued to Plateau Engineering [Company] of Flagstaff.<sup>14</sup>

As of October 10, 2007 the Gannett Fleming designed Pedestrian Barrier had been revised.<sup>15</sup> Sometime after October 10, 2007, (after the termination of Gannett Fleming), the Gannett Fleming designed Pedestrian Barrier was dropped from the crossing design and a new design, the Pedestrian Arches, was substituted in its place. From the point Gannett Fleming exited the design phase of this project the Arches should have never been considered due to the fact they were designed by Plateau Engineering and a retired railroad employee Mark McCallister<sup>16</sup>. As per City documents, if Plateau Engineering had submitted a bid for this project at its inception they never would have been awarded the bid due to the same reasons the city rejected United Civil Group and HDR; Plateau Engineering did not have the "specialized" expertise or experience to design the new safety features. It appears Plateau Engineering used Mr. McCallister as a consultant but Mr. McCallister's credentials and/or qualifications making him a qualified safety engineer have never been presented or confirmed. If Mr. McCallister is simply a retired railroad employee, that in itself does not give Mr. McCallister the specialized safety knowledge required to be a design consultant for this project. Furthermore, Gannett Fleming's loss of personnel with railroad expertise and knowledge of the Flagstaff Railroad crossings,<sup>17</sup> made the review of the changes to the pedestrian safety features impossible. So the change in the barrier safety devices was never recommended or approved by the Diagnostic Team.<sup>18</sup>

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<sup>11</sup> Robert Franson, Capital Improvements Manager, Public Notice for RSOQ, August 2005. **APPENDIX A.3a**

<sup>12</sup> Gannett Fleming, "Flagstaff Railroad Modification Project, Gannett Fleming Appraisal of Completed Work" August 27, 2007.

**APPENDIX A.4**

<sup>13</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, Letter to Gannett Fleming, RE: Flagstaff Railroad Modification Project, July 19, 2007. **APPENDIX A.5**

<sup>14</sup> Gannett Fleming, "Flagstaff Railroad Modification Project, Gannett Fleming Appraisal of Completed Work" August 27, 2007.

**APPENDIX A.4**

<sup>15</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, "Memorandum, Rail Crossing Quiet Zone project", October 10, 2007, p.4 **APPENDIX A.6a-6d**

<sup>16</sup> *Ibid.*, p1

<sup>17</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, Letter to Gannett Fleming, RE: Flagstaff Railroad Modification Project, July 19, 2007. **APPENDIX A.5**

<sup>18</sup> Randy Whitaker, Senior Project Manager, City of Flagstaff, "Memorandum, Quiet Zone Update Project #922800, July 14, 2008, p. 2 **APPENDIX A.7a-7b**





Beaver Street



San Francisco Street

*(Notice bicycle avoiding Arch and going wrong way and **Two Quadrant Gates** both crossings)*

If the safety changes made to the crossings had been forwarded to the FRA for approval, and the FRA had given its blessing to precede with the design changes, the decision would be **invalid** due to the fact that the FRA representatives never physically inspected the crossing layout,<sup>19</sup> and the information as to the configuration of the downtown crossings, based on the crossing inventories filed with the FRA, which are incorrect<sup>20</sup>. The information lists the Downtown crossings (**Appendix C1a-C1b & C2a-C2b**) with 4 Quadrant Gates or Full Barriers. The pictures on (page 4) clearly show there are not 4 Quadrant Gates or Full Barriers as defined by the Federal Highway Administration (FHA's) Glossary of Terms, (Guidance on Traffic Control Devices at Highway-Rail Crossings, US Department of Transportation, Federal Highway Administration, November 2002).

#### **OTHER BARRIER DEVICES**

##### **FOUR-QUADRANT TRAFFIC GATE SYSTEMS**

Four-quadrant gate systems consist of a series of automatic flashing-light signals and gates where the gates extend across both the approach and

departure side of roadway lanes. Unlike two-quadrant gate systems, four-quadrant gates provide additional visual constraint and inhibit nearly all traffic movements over the crossing after the gates have been lowered. At this time, only a small number of four-quadrant gate systems have been installed in the U.S., and incorporate different types of designs to prevent vehicles from being trapped between the gates.

##### **VEHICLE ARRESTING BARRIER SYSTEM - BARRIER GATE**

A moveable barrier system is designed to prevent the intrusion of vehicles onto the railroad tracks at highway-rail grade crossings. The barrier devices should at least meet the evaluation criteria for a NCHRP Report 350 (Test Level 2) attenuator;<sup>6</sup> stopping an empty: 4500-pound pickup truck traveling at 70 km/h (43 mph). However, it could injure occupants of small vehicles during higher speed impacts, and may not be effective for heavy vehicles at lower speeds.

Two types of barrier devices have been tested and used in the U.S.; vehicle arresting barriers and safety barrier gates.

The vehicle arresting barrier (VAB) is raised and lowered by a tower lifting mechanism. The VAB in the down position consists of a flexible netting across the highway approaches that is attached to an energy absorption system. When the netting is struck, the energy absorption system dissipates the vehicle's kinetic energy and allows it to come to a gradual stop. This device was tested at three locations in the high-speed rail corridor between Chicago, IL and St. Louis, MO.

The safety barrier gate is a movable gate designed to close a roadway temporarily at a highway-rail crossing. A housing contains electro-mechanical components that lower and raise the gate arm. The gate arm consists of three steel cables, the top and bottom of which are enclosed aluminum tubes. When the gate is in the down position the end of the gate fits into a locking assembly that is bolted to a concrete foundation. This device has been tested to safely stop a pickup truck traveling at 72 km/h (45 mph) and has been installed in Madison, WI and Santa Clara County, CA.

A barrier gate could also be applied in those situations requiring a positive barrier e.g., in a down position, closing off road traffic and opening only on demand.

<sup>19</sup> Gannett Fleming, "Quiet Zone/Wayside Horns Update December 2006, Revised 1-22-2007", p. 3 **APPENDIX.8.a**

<sup>20</sup> Federal Register, PART IV DEPARTMENT OF TRANSPORTATION, Federal Railroad Administration, "49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule", August 17, 2006, p. 47640



The information on four, possibly all five crossings is incorrect and/or obsolete as exemplified by the traffic counts at the Steves crossing which shows a traffic count of 11,028 vehicles per day, (Appendix C3a-3d). That count was based on the traffic flowing over the Steves crossing several years before the new four lanes Fourth Street Bridge, located approximately one half mile away, was built. Since the FRA requires accurate crossing inventories<sup>21</sup> to be filed prior to the implementation of a quiet zone this project should not be implemented until that information is correctly updated.

Gannett Fleming and the Diagnostic Team chose three designs based on the following paradigm and instructions. "Pedestrian safety would play a prime roll"<sup>22</sup>. In all scenarios presented by Gannett Fleming and the Diagnostic Team there are only three modifications suggested:<sup>23</sup>

- A. Wayside Horns - Scenario A (**Recommended**)
- B. Pedestrian Barriers - Scenarios B and D (**Recommended**)
- C. Four Quadrant Gates – Scenarios C and E

In Gannett Fleming's opinion, implementation of Wayside Horns (1°)<sup>24</sup> or Pedestrian Barriers (2°) would best serve this project. In summary the crossings are unsafe for following reasons:

1. The sidewalk modifications that have been incorporated into the design by Plateau Engineering have been designed by a company not qualified to alter these designs.
2. Gannett Fleming or a qualified safety engineering company like Gannett Fleming and the Diagnostic Team never reviewed or approved these changes.
3. The FRA is completely unaware of the crossing configurations and if they have made a ruling approving these changes the decision would be invalid due to inaccurate information.
4. The newly designed Pedestrian Arches, which may have provided the necessary pedestrian safety if coupled with 4 quadrant gates or Full barriers, which would have acted as some sort of street and pedestrian barrier and channelization device recommended by the FRA, in fact, **do not exist**.
5. The current crossing design for pedestrian safety does not comply with the current recommended FRA pedestrian safety crossing modifications.<sup>25</sup>
6. The argument presented in the "Rail Crossing Modification Project, Flagstaff Quiet Zone, 60% design narrative, page 4", presented to the Arizona Corporation Commission by Plateau Engineering states: "our concern is that the proposed channelization barriers would not be an effective means of controlling pedestrian traffic and could be a safety concern if pedestrians needed to get out of the way of an oncoming vehicles"; the logic of removing safety devices since nobody will use them anyway, seems obtuse.

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<sup>21</sup> Federal Register, PART IV DEPARTMENT OF TRANSPORTATION, Federal Railroad Administration, "49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule", August 17, 2006, pp. 47640-47644

<sup>22</sup> Gannett Fleming, "Quiet Zone/Wayside Horns Update December 2006, Revised 1-22-2007", p. 3 **APPENDIX A.8a**

<sup>23</sup> Gannett Fleming, "Quiet Zone/Wayside Horns Update December 2006, Revised 1-22-2007", p. 9 **APPENDIX A.8b**

<sup>24</sup> Gannett Fleming, "Quiet Zone/Wayside Horns Update December 2006, Revised 1-22-2007", p. 17 **APPENDIX A.8c**

<sup>25</sup> FRA, "A Compilation of Pedestrian Safety Devices in Use at Grade Crossings", January 2008, p.26 **APPENDIX A.9**

7. If the proposed safety devices are not effective then redesign or return to the original design, namely Wayside Horns or Pedestrian Barriers and/or 4 Quadrant gates would be in order.
8. That would effectively meet the safety<sup>26</sup> and liability concerns of this project and be in line with the current FRA crossing recommendations.<sup>27</sup>

Pedestrian accidents will continue to happen at the two downtown crossings even with all safety equipment functioning and in place, as the two following examples illustrate.



#### **Man killed by train ducked under barricade**

Friday, March 20, 2009

The man hit by a train Wednesday night has been identified.

Ray Sumatzkuku, 49, of Polacca, was pronounced dead at about 10 p.m. when he walked in front of an eastbound train at the South San Francisco Street crossing, according to information from the Flagstaff Police Department.

He is known to police as a local street alcoholic. His identity was confirmed by a jail booking photo taken after a March 12 arrest for drinking alcohol in public. He has several petty crime convictions in Flagstaff and Winslow for alcohol-related offenses, including consuming alcohol in public, disorderly conduct, loitering to beg, shoplifting, assault and trespassing.

The train engineer saw Sumatzkuku cross under the lighted barricade while he was blowing the train horn. Sumatzkuku did not acknowledge the train and appeared confused to the engineer, who had engaged the emergency brakes after seeing him on the tracks.

Sumatzkuku was pronounced dead at the scene. Whether alcohol was a factor in the incident will have to be determined by the Coconino County Medical Examiner.

The investigation continues.

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The accident on the following page, (page 8) occurred when a driver turned south onto San Francisco Street and was struck by a train while inside the crossing. South is the wrong direction on this one way street. The bicyclist, not riding in the bike lane<sup>28</sup>, (located on the opposite side of the street), as pictured on (page 4) demonstrates this common mistake. (The picture on page 4 was not staged for this report and is supported by Diagnostic Team meeting notes)<sup>29</sup>. Obviously there was/are no 4 Quadrant gates or Full Barriers to stop a motorist evidenced in the following accident report.

**Result: One Killed, One Seriously Injured.**

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<sup>26</sup> Federal Register, PART IV DEPARTMENT OF TRANSPORTATION, Federal Railroad Administration, "49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule", August 17, 2006, pp. 47649 & 47653

<sup>27</sup> FRA, "A Compilation of Pedestrian Safety Devices in Use at Grade Crossings", January 2008, p.26 **APPENDIX A.9**

<sup>28</sup> Plateau Engineering, Rail Crossing Modification Project, "Flagstaff Quiet Zone", 60% Design Narrative, Application for new Quiet zone, Filed AZ Corporation Commission, March 6, 2009, p.4

<sup>29</sup> Ibid.



DEPARTMENT OF TRANSPORTATION  
FEDERAL RAILROAD ADMINISTRATION (FRA)

ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of		Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad BNSF Rwy Co. [BNSF]		1a. BNSF	1b. AZ0301204
2. Other Railroad Involved in Train Accident/Incident		2a.	2b. AZ0301204
3. Railroad Responsible for Track Maintenance BNSF Rwy Co. [BNSF]		3a. BNSF	3b. AZ0301204
4. U.S. DOT-AAR Grade Crossing ID No. 025132G		5. Date of Accident/Incident 03/26/01	6. Time of Accident/Incident 01:00 PM
7. Nearest Railroad Station FLAGSTAFF		8. Division ARIZONA	9. County COCONINO
		10. State Abbr. 04	Code AZ
11. City (if in a city) FLAGSTAFF		12. Highway Name or No. SAN FRANCISCO STREET	
		<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
Highway User Involved		Rail Equipment Involved	
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify)		17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL	
14. Vehicle Speed (est. mph at impact) 2		18. Position of Car Unit in Train 1	
15. Direction (geographical) 1. North 2. South 3. East 4. West		19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user	
16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped		20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither	
20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither		20c. State the name and quantity of the hazardous materials released, if any	
21. Temperature (specify if minus) 50 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark	
23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow		24. Type of Equipment A. Spec. MoW Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) 3. Commuter train 6. Cut of cars 9. Main./inspect.	
25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry		26. Track Number or Name MAIN LINE	
27. FRA Track Class 3		28. Number of Locomotive Units 2	
29. Number of Cars 80		30. Consist Speed (Recorded if available) R. Recorded E. Estimated 38 mph	
31. Time Table Direction 1. North 2. South 3. East 4. West		32. Type of Crossing 1. Gates 4. Wlg wags 7. Crossbucks 10. Flagged by crew 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) 3. Standard FLS 6. Audible 9. Watchman 12. None	
33. Signaled Crossing Warning 20 sec warn min (1);		34. Whistle Ban 1. Yes 2. No 3. Unknown	
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach		36. Crossing Warning with Highway Signals 1. Yes 2. No 3. Unknown	
37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown		38. Driver's Age 79	
39. Driver's Gender 1. Male 2. Female		40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	
41. Driver 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop		42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown	
43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obscured		44. Driver was 1. Killed 2. Injured 3. Uninjured	
45. Was Driver in the Vehicle? 1. Yes 2. No		46. Highway-Rail Crossing Users 1 1	
47. Highway Vehicle Property Damage (est. dollar damage) \$1,000		48. Total Number of Highway-Rail Crossing Users (include driver) 2	
49. Railroad Employees 0 0		50. Total Number of People on Train (include passengers and crew) 2	
51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No		52. Passengers on Train 0 0	
53a. Special Study Block		53b. Special Study Block	
54. Narrative Description			
55. Typed Name and Title		56. Signature	
		57. Date	

- If the Commission reviews the accident reports on file with the FRA. The Commission will find San Francisco Street is by far, the deadliest crossing in Flagstaff.



The following fictional scenario is based on similar **real events** and demonstrates what could happen if the Flagstaff Quiet Zones are approved “as is”.





*(This event was staged and no 15 yr. old girls were actually hurt during the filming of this Dramaization )*

**Scene:** Court room, hearing the wrongful death case of a 15 year old girl hit and killed by a locomotive at an at grade crossing.

**Players:** Attorney for the deceased girl's parents, and the City Project Manager in charge of a recent modification to the at-grade crossing where the young girl was killed.

**Staging:** The City Project Manager sitting in the witness chair being questioned by the Plaintiff's Attorney.

---

ATTORNEY: Mr. City Project Manager do you feel the City is at fault for the young girl's death?

CITY PROJECT MANAGER: No

ATTORNEY: Why not?

CITY PROJECT MANAGER: The young girl was walking down the sidewalk with headphones on and most likely looking down texting on her cell phone to her friends. She wasn't aware of the oncoming train.

ATTORNEY: Why do you think she walked in front of a 9,000 ton train traveling along at 45 MPH?

CITY PROJECT MANAGER: She was looking down and didn't see the Pedestrian Arches we installed to warn people of the passing trains I guess.

ATTORNEY: If there had been a channelization device installed on the sidewalk do you think she would have looked up and seen the train coming or; if a pedestrian barrier or a crossing arm were blocking the sidewalk do you think she may have not even been able to walk into the train's path?

CITY PROJECT MANAGER: Probably.

ATTORNEY: Why didn't she hear the train horn or warning bells?

CITY PROJECT MANAGER: The train horn wasn't required to blow and the locomotive engineer didn't see her in time to sound the locomotive horn. Also, she was probably listening to music and didn't hear the bells.

ATTORNEY: If there had been a Wayside Horn at the crossing would she have heard that?

CITY PROJECT MANAGER: Maybe.

ATTORNEY: Why weren't Barriers, 4 quadrant gates, channelization devices or Wayside Horns installed at these crossings as Supplemental Safety devices?

CITY PROJECT MANAGER: The City Department Heads, City Manager, City Council, myself and Design Company A, the company who designed the crossing safety features, felt the safety precautions installed at the crossing were sufficient.

ATTORNEY: Are you qualified to design railroad crossing safety features?

CITY PROJECT MANAGER: No.

ATTORNEY: Are the City Department Heads qualified to design railroad crossing safety features?

CITY PROJECT MANAGER: No.

ATTORNEY: Is the City Manager qualified to design railroad crossing safety features?

CITY PROJECT MANAGER: No.

ATTORNEY: Is the City Council qualified to design railroad crossing safety features?

CITY PROJECT MANAGER: No.

ATTORNEY: Is Design Company A, hired by the City qualified to design railroad crossing safety features?

CITY PROJECT MANAGER: No.

ATTORNEY: Is it a fact that initially the City hired a different Design Company, Design Company B; Company B who specializes in railroad crossing design and safety and in fact was one of only two qualified companies in the entire State to design the safety features at the crossing?



CITY PROJECT MANAGER: Yes.

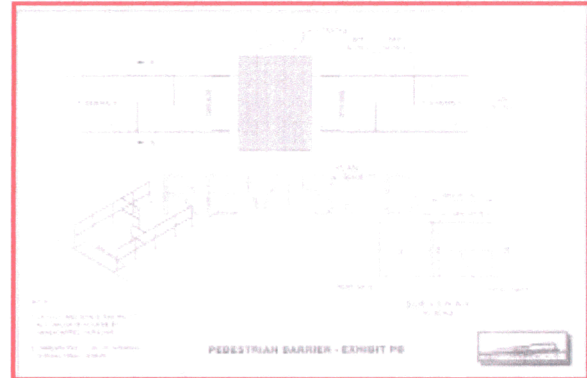
ATTORNEY: What was Design Company B's recommendation?

CITY PROJECT MANAGER: Installation of 4 Quadrant gates, Pedestrian barriers or Wayside Horns.

1. Wayside Horns - Scenario A

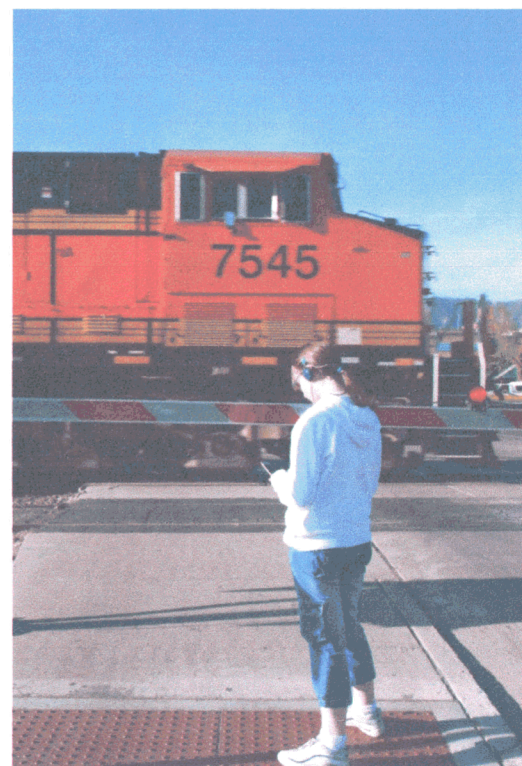
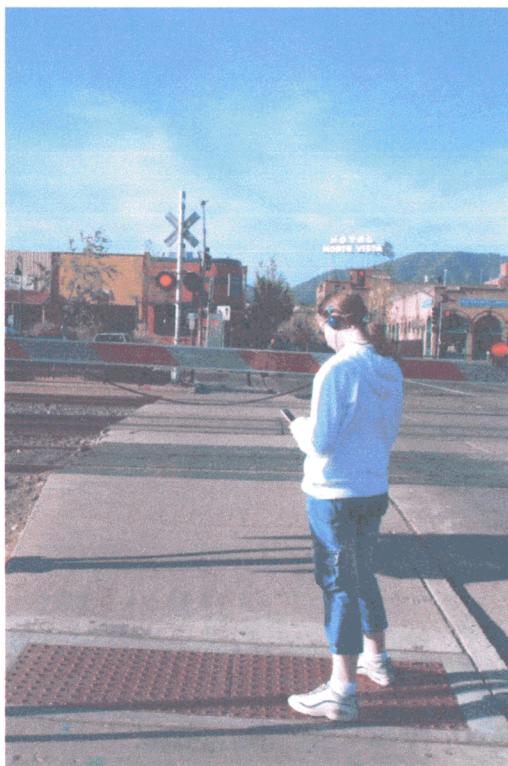


2. Pedestrian Barriers – Scenario B (Appendix A.6d)



Alternative choices: Scenarios C, D, and E

3. Barrier Gates – Scenarios C through E (Suggested by Diagnostic Team for “4 quadrant continuity”)<sup>30</sup>



<sup>30</sup> Plateau Engineering, Rail Crossing Modification Project, “Flagstaff Quiet Zone”, 60% Design Narrative, Application for new Quiet zone, Filed AZ Corporation Commission, March 6, 2009, p.4

ATTORNEY: So is it true you ignored and disregarded a qualified design company's' design features, specifically designed to avoid an accident like the one that killed my client's young daughter and instead used inadequate safety features designed by an unqualified company?

CITY PROJECT MANAGER: I guess so.

ATTORNEY: Was the State Agency in charge of approving these crossing modifications aware of the fact you used an unqualified design company to design the crossing where the young girl was killed?

CITY PROJECT MANAGER: Yes, but we told them it would be ok.

ATTORNEY: So let me ask you again, Mr. City Project Manager do you feel the City is at fault for the young girl's death?

CITY PROJECT MANAGER: (*Silence....*)

---

The question remains. How can these crossings be made as safe as possible while at the same time control the excessive noise from the locomotive horn and minimizing liability?

One Solution: Flagstaff has already paid one million dollars and five years for the answer, Scenario A or preferably B. If the City feels the cost associated with the implementation of Scenario B is excessive, the cost of installing Wayside Horns Downtown would be minimal.

The pictures on (*page 14*) show that the Wayside Horns are already installed at Steves and Fanning. These installations seem temporary, (as evidenced by the bases being supported by loose rock and dirt and the masts being erected in drainage ditches). Information and traffic patterns revealed by the already underway **Steves/Fanning Rail Crossing Study**<sup>31</sup>, (*page 15*) and additional road construction, **Industrial drive Fanning to Eagle Mountain**<sup>32</sup>, (*page 15*), already in progress making a second above-grade crossing available close to Fanning, These traffic alterations could make both crossings redundant and eligible for permanent closure.<sup>33</sup>

If the Steves and Fanning crossings could both be closed, the two Wayside Horns could be relocated and installed at the Beaver and San Francisco crossings. Although an additional Wayside Horn may have to be purchased for Enterprise. No additional funding should be necessary since the City Staff has back charged between \$175,000 to \$342,000 for "staff fees" to this project. The money budgeted for the Quiet Zone Project should still be available and in the Community Development Department.

Since a Wayside Horn is a one for one substitution for a locomotive horn and the primary recommendation by the Diagnostic Team, the two Downtown crossings will be as safe as before and the liability of making the crossings more dangerous will have been eliminated.

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<sup>31</sup> City of Flagstaff, Managers Report, May 4, 2009

<sup>32</sup> Ibid.,

<sup>33</sup> Federal Railroad Administration/Federal Highway Administration, "Highway-Railroad Grade Crossings, a Guide to Crossing Consolidation and Closure", July 1994





Steves Crossing



Fanning crossing

**Industrial Drive Fanning to Eagle Mountain**

The project is scheduled to start construction the week of May 4, 2009 and completed by November 2009.

**Project Manager ? Tiffin Miller, 226-4861**

**\*Steves/Fanning Rail Crossing Study- Consultant: Kimley Horn :**

- As part of the Fourth Street overpass discussions with BNSF, the City agreed to study the possibility of closing either the Steves or Fanning rail crossing.
- The design firm, Kimley Horn, has been retained by the City to complete the study. Some components of the study are compiling existing traffic information; having three public meeting from June to August 2009 and modeling traffic patterns if a crossing was closed.
- The public meetings will be at the Flagstaff Aquaplex on the first Wednesday of June, July and August from 6:00 to 7:30 pm. At the first meeting on June 3<sup>rd</sup>; existing traffic conditions, future projects that will affect the area and preliminary traffic modeling will be presented.
- At the second meeting on July 1<sup>st</sup>; an analysis of the information gathered to date and public comments from the June meeting will be presented.
- At the final public meeting on August 5, preliminary recommendations will be presented.
- It is anticipated that a draft final report will be presented to Council in the month of September. **Project Manager? Randy Whitaker, 226-4844**

In conclusion: A Quiet Zone is treated as one unit and not a set of individual crossings. If the Commission or some other State Agency does approve the addition of the Wayside Horns at Steves and Fanning Crossings, it is in fact approving the entire Quiet Zone and all modifications including the pedestrian arches as a substitute for recommended pedestrian barriers, (Barrier \ n. 1. A material object or set of objects that separates demarcates or serves as a barricade. ), and any subsequent responsibility and liability for pedestrian accidents at the other three Flagstaff crossings.

Thank you for reviewing this document.

Sincerely,

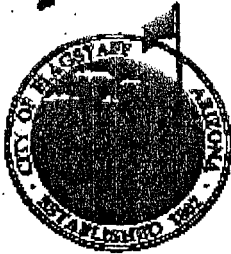


Walter F. Robertson

1690 N. Falcon Rd.

Flagstaff, AZ 86004





**NEW APPLICATION  
ORIGINAL**

**RECEIVED**

2009 FEB 19 P 4 37

**AZ CORP COMMISSION  
DOCKET CONTROL**

February 17, 2009

Arizona Corporation Commission  
Attn: Chris Watson  
2200 North Central Avenue  
Suite #300  
Phoenix, AZ 85004

RR-02635B-09-0075

Re: Applicant for Existing Rail Crossing Changes, DOT #'s 025099J & 025129Y

Mr. Watson,

This application is to install additional warning devices at the Steves and Fanning railroads crossings. The existing lights and gates will not be altered but wayside horns will be installed at each crossing. The following historic information is in the context of creating a quiet zone that the wayside horns are a part of. There are other crossings in the quiet zone but no changes will be made to the warning devices, roadway configuration or pavement marking at these crossings.

In accordance with the Federal Railroad Administrations Quiet Zone ruling 49 CFR Parts 222 and 229, the City of Flagstaff, Arizona intends to create a New Quiet Zone. The intent of this action is the elimination of train horn noise at railroad crossings within the limits of the City.

**Crossings Contained Within the Quiet Zone:**

- |                        |                        |
|------------------------|------------------------|
| • Beaver Street        | DOT Crossing # 025133N |
| • San Francisco Street | DOT Crossing # 025132G |
| • Enterprise Avenue    | DOT Crossing # 025131A |
| • Steves Boulevard     | DOT Crossing # 025099J |
| • Fanning Drive        | DOT Crossing # 025129Y |

Arizona Corporation Commission  
**DOCKETED**

FEB 19 2009

DOCKETED BY

ne

An on-site meeting was held on May 2, 2006 with the following attendance:

Kurt Anderson, Railroad Controls

Barry Gondron, Gannett Fleming

Chris Watson, Arizona Corporation Commission

Stu Seubert, City of Flagstaff (part time)

Randy Whitaker, City of Flagstaff

Debbie Jo Maust, City of Flagstaff

Gerry Craig, City of Flagstaff (part time)

Megan McIntyre, BNSF

Tom Chilcoat, BNSF

Note: FRA representatives could not attend due to financial situation.

At this field meeting the various safety measures were discussed that could occur at each of the crossing and a report "Quiet Zone/Wayside Horn Update December 2006, Revision 1-22-07 was issued to each participant.

In accordance with 29 CFR Part 222.43, on March 14, 2008 a Notice of Intent which included 60% drawings was provided by means of Certified Mail, Return Receipt Requested to:

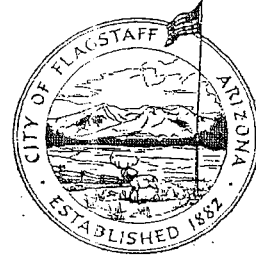
- All railroads operating over the public highway rail -- grade crossings within the Quiet Zone (BNSF Railroad);
- The State Agency responsible for highway and road safety (Arizona Department of Transportation)
- The State Agency responsible for grade crossing safety (Arizona Corporation Commission)

There is a statutory 60-day comment period after the date this Notice of Intent is mailed. BNSF did have several comments that have been addressed in the 100% drawings.

There are currently lights and gates at all five crossing within the project and these devices will not be changed as part of this project. Per the FRA Ruling to create the Quiet Zone, Beaver, San Francisco and Enterprise crossings will only require additional signage and fencing. Additional warning devices in the form of wayside horns will be installed at the Steves and Fanning crossings.

The City is funding the project and will be responsible for maintaining all signage, fencing and equipment installed as part of the project. The exception is the new electronic equipment inside the BNSF cabinet that sends a signal to the wayside horns will be maintained by BNSF.

There is not an overall agreement required to create the quiet zone but a Wayside Horn Agreement was required by BNSF.

**CITY OF FLAGSTAFF  
STAFF SUMMARY REPORT**

To: The Honorable Mayor and Council

From: Randy Whitaker, Project Manager, 226-4844  
Community Development Department

Date: January 11, 2006

Meeting Date: February 7, 2006

---

**Title:**

Consideration of award of contract for Consultant Services for the Rail Crossing Modifications-Quiet Zones.

**Recommended Action:**

It is recommended that City Council:

1. Award the contract to Gannett Fleming of Phoenix, Arizona in the amount of \$109,040.30 for design services for the Rail Crossing Modifications-Quiet Zones, which includes a 10% contract allowance in the amount of \$9,520 with a contract time of 365 days.
2. Authorize the City Manager to execute the necessary documents, and
3. Authorize a Change Order Authority for the City Manager in the amount of 10% of the design cost (\$9,520) for the project, to cover the potential costs associated with unanticipated or additional items of work.

---

**ACTION SUMMARY:**

Award of the Agreement for Consultant Services to Gannett Fleming will provide a contract for the engineering consultant to provide the design and prepare construction plans and documents for Rail Crossing Modifications-Quiet Zones.

**DISCUSSION:**

**Background/History:**

A consultant agreement with Gannett Fleming for a quiet zone feasibility study was executed in October 2004 and completed in January 2005. This study concluded that a quiet zone was feasible within the City of Flagstaff. This design contract will continue and expand on that study.

The Capital Improvements Section and other City staff representing the Traffic Engineering Section and the Risk Management Section reviewed the one Statement of Qualification for Consultant Services received for this project. The evaluation committee unanimously agreed that it was in the City's best interest to award services to Gannett Fleming.

**Key Considerations:**

This is a very specialized design with a limited number of design firms in Arizona having prior experience in this area. To Staff's knowledge the only other company in Arizona that has experience with the Railroad was aware of the project. The design will include the Fanning, Steves, Enterprise, Beaver and San Francisco crossings.

An agreement will have to be signed with BNSF Railroad for the construction and maintenance of the proposed safety equipment that will be in the railroad right-of-way. At this time it is planned that BNSF will be doing the construction within the their right-of-way with the City contracting out any work required outside the railroad right-of-way.

**Community Benefits and Considerations:**

The benefit is to create a City wide quiet zone to reduce the noise associated with the railroad. Options include limiting the area where horn noise can be heard by using a horn mounted on the signal pole (wayside horn) or totally eliminating the horn noise except when the train engineer sees an unsafe condition.

**Community Involvement:**

This project is in response to public request to eliminate or control the noise from horns of trains passing through Flagstaff. There has been past presentations to the Council concerning this topic which the public had an opportunity to comment on and a public meeting is planned as part of the scope of work for this agreement.

**Financial Implications:**

# APPENDIX A.2c

Staff Report

Page 3

The estimated cost for design and construction varies from \$239,000 to \$917,470. The lower estimate is the minimum needed to comply with the Federal Railroad Administration regulations obtained by averaging the risks of all five crossings and no additional pedestrian safety measures. The upper estimate is for a true quiet zone with each crossing individually designed with safety improvements along with added pedestrian safety measures at Beaver and San Francisco. The scope of work in this agreement is for the upper estimate.

The project is currently funded by the FY 05/06 budget (acct. no. 040-9228-607) in the amount of \$128,175. It is anticipated that Construction funding will be appropriated in FY 06/07.

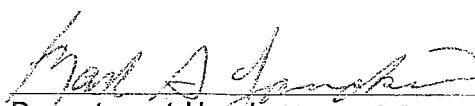
## Options and Alternatives:

Options available to the Council include:

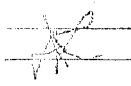

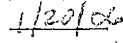
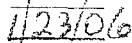

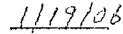
1. Authorize the award of the contract as presented.
2. Reject authorization of the award. This would effectively delay the design of the project and delay the start of construction.

## Attachments/Exhibits:

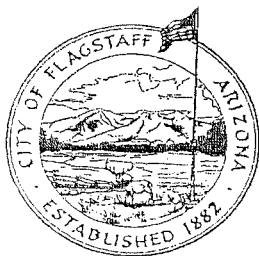
1. Project Vicinity Maps
2. Consultant Services Agreement



Department Head (Acknowledgment that all reviews have been completed and required approvals initialed below.)

INITIALS	RESPONSIBILITY	DATE	INITIALS	RESPONSIBILITY	DATE
	BIDS/PURCHASES			FINANCE/BUDGET	
	GRANTS			CONTRACTS	
	LEGAL			IGAS	
				Comm. Imp. Director	

DATE OF COUNCIL APPROVAL: \_\_\_\_\_



# MEMORANDUM

## Community Improvements Division

DATE: September 7, 2005

TO: Robert Franson  
Delores Beck

FROM: Randy Whitaker

RE: Quiet Zone RSOQ

There was only one response to the RSOQ for the Quiet Zones. This was from Gannett Fleming

I talked with Kim Carrol at Kirkham Michael (KM) about why they did not submit. She indicated that since Gannett Fleming did the original study KM would have been at a disadvantage and decided not to propose at the last moment.

I have talked with Steve Blair at Maricopa County since they did an RSOQ for design of quiet zones for the county. They chose KM for the design but had heard of Gannett Fleming. United Civil Group and HDR, traffic-engineering firms, did respond to their proposal but per Steve they did not have any quiet zone experience.

Also talked with Bryan Layman with the Arizona Corporation Commission. He knew about KM and really did not know of any other firms in Arizona that had railroad expertise. KM has done mailings in Arizona to solicit quiet zone work.

I do not think it would be beneficial to advertise again given the expertise required for quiet zones and the limited firms that have experience in quiet zones. It is my recommendation that the City enters into negotiations with Gannett Fleming as the design firm for the quiet zones.

Thank You

Randy Whitaker  
Senior Project Manager

APPENDIX A.3

003 RSOQ response

## APPENDIX A.3a

### I. PUBLIC NOTICE

City of Flagstaff – Capital Improvements Division  
NOTICE of Request For STATEMENT of QUALIFICATIONS (RSOQ)  
Rail Crossing Modifications – Quiet Zones, Project #922800

The Capital Improvements Section for and on behalf of, the City of Flagstaff, is seeking Statements of Qualifications from Arizona licensed Design or Engineering Professionals for services for:

**The City of Flagstaff is requesting Provider for professional services in the formation of a quiet zone. Services shall include but not limited to BNSF Railway coordination, cost analysis and design documents necessary in the formation of a quiet zone.**

#### SCHEDULE OF STATEMENT DEADLINES

Advertise for Services:	August 14 & 21, 2005
Statements Due:	3:00 p.m. MST September 2, 2005
Anticipated Award of Professional Services Contract:	Week of December 5, 2005
Anticipated Construction Start:	Spring 2006

Statements may be **mailed** to: City of Flagstaff Capital Improvements Section, Attn: Randy Whitaker - Senior Project Manager, 211 West Aspen Avenue, Flagstaff AZ. 86001, or Statements may be **delivered** to: Capital Improvements Section, 100 W. Birch Ave., Flagstaff AZ. 86001, with the understanding that materials must be in hand by 3:00 p.m. MST, September 2, 2005. Statements received after that time and date **will be considered non-responsive and will be returned unopened.**

Additional information and/or Request for Statement of Qualifications packages may be obtained at the office of City of Flagstaff Capital Improvements Section, 100 W. Birch Ave., Flagstaff, AZ 86001, or by emailing a request to: [rwhitaker@ci.flagstaff.az.us](mailto:rwhitaker@ci.flagstaff.az.us) or by calling 928-226-4844.

The City of Flagstaff reserves the right to reject any or all Statements, to waive or decline to waive irregularities in any Statement, or to withhold the award for any reason it may determine.

CITY OF FLAGSTAFF

\_\_\_\_\_  
Mr. Robert Franson PE, Capital Improvements Engineer

Published two times: August 14 and 21, 2005; Arizona Daily Sun, The Arizona Republic

ATTACHMENT NO. 1  
City of Flagstaff  
Flagstaff Railroad Modification Project  
Gannett Flemings Appraisal of Completed Work  
August 27, 2007

**Background:** The City of Flagstaff executed a contract with Gannett Fleming to plan and design a quiet zone project for five crossings in Flagstaff: Beaver Street, San Francisco Street, Enterprise Avenue, Steves Boulevard and Fanning Drive. The initial project budget was \$99,520.30 with a contract allowance of \$9,520.00 of which \$7,908.59 was issued for a total contract value of \$107,428.89. The remaining contract allowance is \$1,611.41 as of Field Change Order No. 4.

Gannett Fleming initiated work in 2005, completed the conceptual engineering phase and issued a Quiet Zone/Wayside Horn Update, December 2006. The project was delayed by the City of Flagstaff due to a protracted time frame to secure approval from the City of Flagstaff City Council. In April 2007 the City Council selected Scenario D. The Diagnostic Team recommended either Scenario A or B. A second project kick-off meeting was held on June 4, 2007 to start the final design phase of the project.

However, during the delay of the project the Gannett Fleming project manager resigned and relocated to Florida to address family issues. The BNSF diagnostic team member also left the project.

The new Gannett Fleming replacement project manager and his signal manager expressed concerns regarding the City Council selection of a recommendation not endorsed by the Diagnostic Team. (See Gannett Fleming letter of June 29, 2007.) However, Gannett Fleming was agreeable to progress the final design of Scenario D. Gannett Fleming developed a detailed bottoms-up cost estimate complete with drawing and a specification list; the total cost to complete was \$174,201.71 less remaining funds of \$49,286.70. Thus, additional funding of \$124,915.01 was estimated to be needed to complete the work. Gannett Fleming indicated that the initial final design cost estimate was not a detailed bottoms-up estimate and it was not based on the City Council recommendation. Additionally, implementation of Scenario D would result in additional property takings and generally require more work. The City of Flagstaff did not agree that the initial cost estimate fully supported the anticipated final design for an option that the City did not yet select.

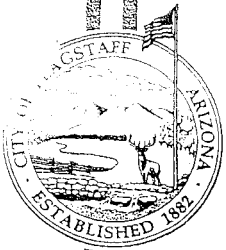
Property  
not included  
in final  
design

→ not correct

The City of Flagstaff and Gannett Fleming agreed to a three week suspension to try and reach a consensus on the design cost to complete the original contract scope. The City of Flagstaff terminated the Gannett Fleming Contract on August 7, 2007.

APPENDIX A.4





# City of Flagstaff

July 19, 2007

Roger W. Milroy  
Suite 250  
477 N. 24<sup>th</sup> Street  
Phoenix AZ 85016

Re: Flagstaff Railroad Modification Project

The City is concerned regarding the loss of personnel with railroad expertise in your Phoenix office, attention to our project and personal knowledge of the Flagstaff Railroad Crossings. Some examples are the confusion on the risk index, personnel having to be involved from your Pennsylvania office and incorrect drawings recently received that indicated wayside horns at Beaver /San Francisco.

We are also concerned with the cost increase proposed by Gannett Fleming. The original contract included Landscape, Pedestrian Counts and Intrinsic involvement for a total cost of \$34,486.52 that was not required. Gannett Fleming's most recent verbal proposal to complete the contract of \$52,000 did not include these tasks, yet the proposal represents a 133% increase in contract cost.

Base Contract	99,520.30
Landscape	-15,000.00
Pedestrian Counts	- 7,681.52
Intrinsic	-11,805.00
Total	\$65,033.78

ASKING 64,474<sup>23</sup>

already paid 47,146<sup>15</sup>

Recent Verbal \$52,000 + Base Contract \$99,520 / Total \$65,033 = 133% Increase

Staff does not feel the cost increases have been justified to date. Given the personnel changes and considerations above the City would like to discuss terminating your contract.

The City does have an On-Call service agreement with Plateau Engineering and has considered continuing the project with Plateau Engineering. It would be necessary for Plateau Engineering to subcontract Railroad expertise in some capacity. The City would not be adverse to Gannett Fleming performing as a sub-consultant to Plateau Engineering.

Please contact me within 5 days so we may discuss these concerns.

Randy Whitaker, Senior Project Manager  
928-226-4844  
City of Flagstaff

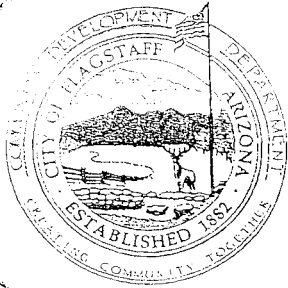
*Randy Whitaker*

CC: Stu Seubert, City of Flagstaff; James Duval, City of Flagstaff

Arizona Relay Service 7-1-1

211 West Aspen Avenue, Flagstaff, Arizona 86001  
Main & TDD (928) 774-5281 • Fax (928) 779-7696





# MEMORANDUM

## Capital Improvements Section

DATE: October 10, 2007

TO: Mayor and City Council

THROUGH: John Holmes, City Manager

CC: Mark Landsiedel, Community Development Director  
Rick Barrett, City Engineer

FROM: Randy Whitaker, Senior Project Manager *[Signature]*

RE: Rail Crossing Quiet Zone Project

### PROJECT STATUS UPDATE:

The design services agreement with Gannett Fleming has been terminated due to disagreement on cost and performance issues. Utilizing the on-call services agreement, Plateau Engineering of Flagstaff, subconsultant in the original Gannett Fleming agreement, has been selected to complete the design. Mike McCallister, retired railroad employee, will interface with the BNSF railroad and Federal Railroad Administration. His local knowledge and BNSF insight will enhance the ability for Plateau Engineering to successfully complete the project design. It is anticipated that the change will not adversely impact the overall project budget or schedule. The anticipated completion date has not changed from November 2008.

As approved by Council in May 2007 the Quiet Zone Project will include:

- Pedestrian barriers and fencing at Beaver Street and San Francisco Street.
- Enterprise Road will remain the same except for placement of posts in the existing median to keep vehicles from driving over the median.
- Wayside horns will be placed at Steves and Fanning and set at 92 decibels at 100 feet.
- Establishment of a quiet zone city wide and including all five grade crossings.

The duration for implementation of Scenario D was estimated to be 19 months from May 2007 at a cost of \$885,500.

## APPENDIX A.6b

The agreement with Plateau Engineering was signed in September 2007 with scheduled completion in March 2008. Base maps have been produced and final design concepts are developed. Critical items that remain are submitting plans to the Federal Railroad Administration and developing the Construction and Maintenance Agreement with BNSF.

The Pedestrian Barrier diagram included in previous reports showing an offset railing (attached "Pedestrian Barrier - Exhibit PB") will not be utilized. During the design process the Pedestrian Barrier has been modified. The BNSF right-of-way fencing and a short section of railing along the roadway curb will funnel pedestrians to the sidewalk area (attached "Typical Pedestrian Barricade Area") where warning signage that the trains do not blow their horn is to be located. The modified pedestrian barrier will be incorporated into the information sent to the Federal Railroad Administration and the diagnostic team for their review.

Additional or related items that were not considered during the initial scope but which are being discussed by City Staff include:

- City Staff has approached BNSF as to their contributing to the cost of the pedestrian safety fencing along the BNSF right-of-way at Beaver and San Francisco. Information obtained by staff to date is that the only BNSF funds available are related to safety items beyond those considered to be required in creating a quiet zone. Discussions with BNSF regarding the Construction and Maintenance Agreement have not begun but it is anticipated that any funds would be provided as part of this agreement. To date a commitment has not been obtained from BNSF.

Staff has also contacted ADOT regarding Federal Section 130 Safety Funds that are distributed through State DOT agencies. These funds are for safety improvements at the crossings and the safety improvements have to be evaluated on a state-wide basis as far as need. Since the quiet zone is not improving overall safety but only implementing measures that mitigate the removal of the train horn, these funds are not applicable.

The Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) has asked for information regarding the Beaver and San Francisco crossings. NAIPTA is writing a grant application for the Mountain Links transit route from NAU to downtown and may be able to include some funding for crossing improvements in the grant application.

- City Staff is developing the scope for another wayside horn demonstration. The preliminary concept would be to schedule the demonstration for late afternoon when people are home from work. It is anticipated that the demonstration will only occur at the Steves and Fanning crossings. A public relations firm could be utilized to assure the public is informed of the demonstration and to compile results/comments received on the demonstration. Demonstration to include 4-6 volunteer families and to be conducted in approximately 6 weeks.

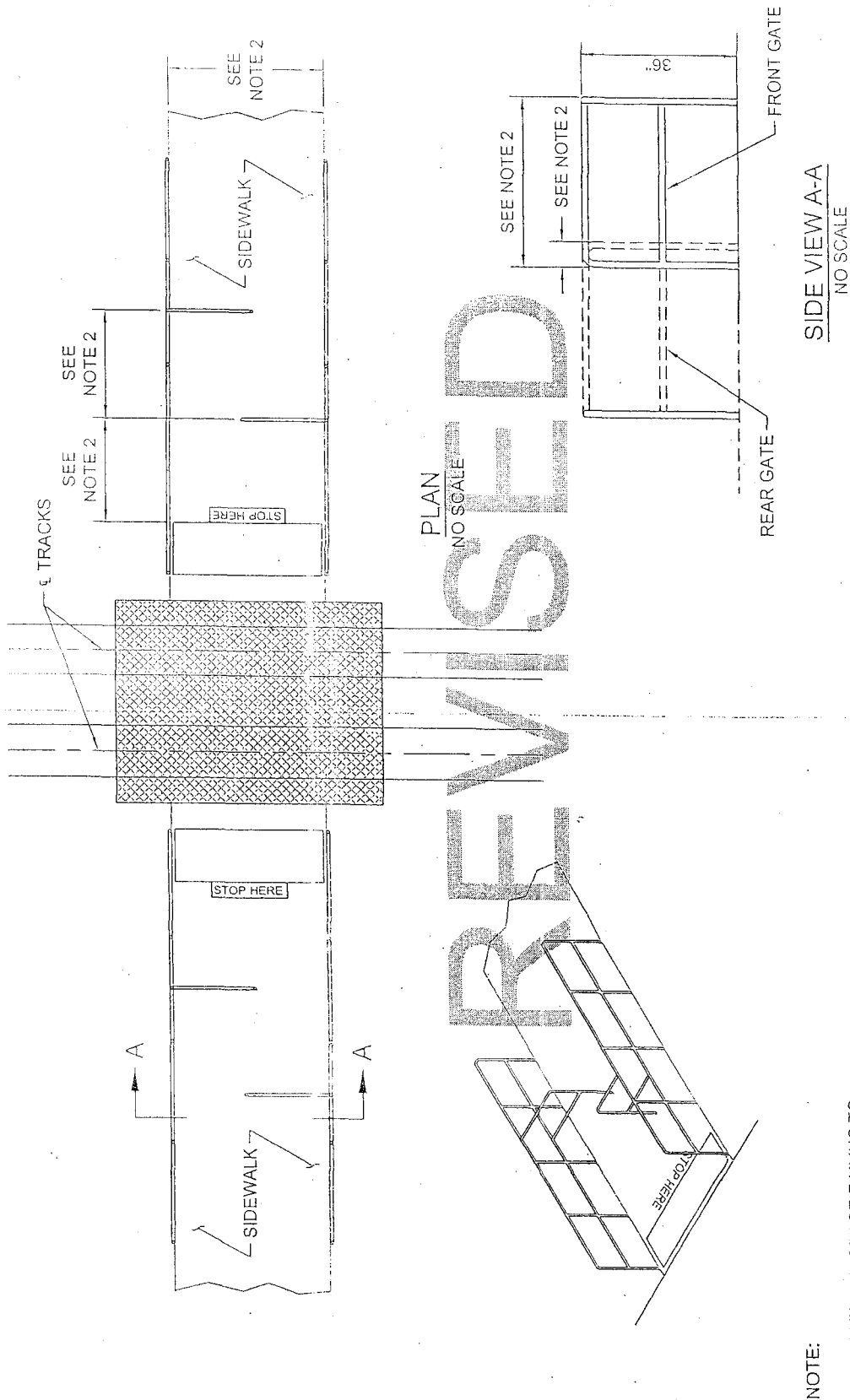
## APPENDIX A.6c

- The schedule and scope of a Steves Boulevard Rail Crossing Study is being developed for implementation next spring. The Study is to identify potential rail crossing modifications that may be warranted at Steves Boulevard and Fanning Drive as a result of changes in traffic patterns attributable to the completion of the Fourth Street Overpass and East Flagstaff Traffic Interchange projects. The study is scheduled to begin in June 2008, after completion of the East Flagstaff Traffic Interchange, so that an accurate representation of the new traffic patterns and volumes can be obtained. Considering that actual traffic conditions at Steves Boulevard and Fanning Drive rail crossings will not be known or evaluated until the completion of the traffic interchange project, the installation of wayside horns appears to be the most economical and expedient means for mitigating the effects of train horns at these two rail crossings.

Thank you for this opportunity to provide this update.  
If you have any questions please contact Randy Whitaker at 226-4844

### Attachments:

Pedestrian Barrier – Exhibit PB  
Typical Pedestrian Barrier Area



**PEDESTRIAN BARRIER - EXHIBIT PB**

# MEMORANDUM

## Community Development Department

DATE: July 14, 2008  
 TO: Kevin Burke  
 Thru: Mark Landsiedel  
 FROM: Randy Whitaker, Senior Project Manager  
 RE: Quiet Zone Update  
 Project # 922800

This memo is to summarize the latest information and alternative analysis regarding the Quiet Zone project. See attached table for historic information.

General Cost Information:

To date there have been two reports that estimate the cost of this project. The original cost estimate was in the 2005 Feasibility Study and the cost was obtained using the national average cost of the various Safety Measures listed on the Federal Railroad Administrations website. This report, as the name indicates, was an overview of what safety measures might be used at the railroad crossings in Flagstaff.

The second report is the "Quiet Zone/Wayside Horn Update December 2006, revised 1-22-07" report which listed the scenarios presented to Council for their action. Costs in this report were estimated by City Staff with some quotes provided by third parties. The 4-Quadrant Gate cost was obtained from BNSF who would install the gates on their property. The agreement with the railroad is based on a time & material cost basis which historically exceeded BNSF's initial estimate. Finally the wayside horn cost is directly from the manufacture.

Below is a basic breakdown of the actual cost to-date:

Feasibility Study	\$9,500
Design Cost (95% Complete)	\$130,000
Two Wayside Horn Demonstrations	\$23,500
Staff & Overhead Cost	\$142,000
TOTAL	\$305,000

## APPENDIX A.7b

### Estimated Remaining Cost:

Design (remaining 5%)	\$10,200
BNSF Agreements and Permits	\$50,000
Staff & Overhead	\$50,000
Construction (Estimate based on 95% bid documents)	<u>\$450,000</u>
	\$560,000

CURRENT ESTIMATED TOTAL PROJECT COST \$865,000

Compared to "Quiet Zone/Wayside Horn Update  
December 2006, revised 1-22-07" estimate of: \$885,500

### Schedule (Current schedule attached):

In May 2007, the Council directed staff to proceed with design which established a completion date estimated to be November 2008. A November or December 2008 date may still be possible if Agreements with BNSF can be worked out in an expeditious manner.

### Current Activity:

Staff is finalizing agreements with the BNSF Railroad and developing Bid Documents for construction. It is anticipated that these activities will be completed in August. The current schedule is to take the BNSF Agreement and the Construction Agreement to Council in September for action.

### Alternative Analysis:

Below are basic facts regarding the Supplementary Safety Measures (SSM) that considered for application at Steves and Fanning and the field discussion by the Diagnostic Team. Megan McIntyre with BNSF and Barry Gondron with Gannett Fleming no longer work with the railroad or Gannett Fleming. So review or input from the original diagnostic team is not available.

The diagnostic team considered SSM's for each crossing independently

Below is a list of the approved SSM per the Federal Railroad Administration's Quiet Zone Rule:

- Temporary Closure of a Public Highway-Rail Grade Crossing.
- Permanent Closure of a Public Highway-Rail Grade Crossing.
- Grade Separation of a Public Highway-Rail Grade Crossing.
- Four-Quadrant Gates upgraded from Two-Quadrant gates, No Vehicle Presence Detection.
- Four-Quadrant Gates with Vehicle Presence Detection.

## 1.2 DIAGNOSTIC TEAM

### Attendance:

Kurt Anderson, Railroad Controls

Barry Gondron, Gannett Fleming

Chris Watson, Arizona Corporation Commission

Stu Seubert, City of Flagstaff (part time)

Randy Whitaker, City of Flagstaff

Debbie Jo Maust, City of Flagstaff

Gerry Craig, City of Flagstaff (part time)

Megan McIntyre, BNSF

Tom Chilcoat, BNSF

Note: FRA representatives could not attend due to financial situation.

### General discussion:

- **Direction**

The Diagnostic Team was instructed to review the five railroad at-grade crossings under the two options described above. 1 - Wayside horn option; 2 - Quiet Zone option.

- **Pedestrian Safety**

Within the review of each crossing and option it was further instructed that pedestrian safety would play a prime roll. Supplementary Safety Measures indicated in the quiet zone ruling have no correlation with pedestrian accidents or safety. They address vehicles only. The Diagnostic Team was instructed to consider mitigation factors for pedestrian safety at each crossing. It was brought up that the MUTCD (Part 10 - Traffic Controls for Highway-Light Rail Transit Grade Crossing) section addresses the use of pedestrian barrier installations for light rail transit crossings and that these could possibly be used and modified to address pedestrian safety concerns at Beaver Street and San Francisco Street situations.

- **Wayside horn maintenance recommendations**

Discussions with Railroad Controls Limited indicated it was in the best interest for the city to supply their own maintenance for the wayside horns. Citing financial consideration and response time as the primary factor for this recommendation. Installations of the wayside horns include operating and maintenance technical training for the City's traffic signal or electrical supervisor.

- **Cost**

No costs are to be considered during Diagnostic Team recommendations.



### 3.0 SCENARIOS FOR COMBINATION OF CROSSING PROTECTION

The following is a combination scenario, with associated conceptual cost, for the implementation of wayside horns or locomotive (true) quiet zone. The Diagnostic Team's recommendation was the basis of Scenario A and B. Additional scenarios were developed to take advantage of as many options possible for decision making.

SCENARIO RECAP TABLE		
Scenario	Duration Decision to Completion	Conceptual Cost
A	11 months	\$990,150.
B	29 months	\$2,409,250.
C	29 months	\$3,881,250.
D	19 months	\$885,500.
E	29 months	\$2,386,250.

**Scenario A Recommendation by the diagnostic team for use of wayside horns.**

- Install wayside horns at all locations.

**Scenario B Recommendation by diagnostic team to create a Quiet Zone.**

- Install pedestrian barriers at Beaver and San Francisco.
- Median used as Alternative Safety Measure at Enterprise.
- Install Four-Quadrant Gates at Steves and Fanning.

**Scenario C Creates a Quiet Zone using Four-Quadrant gates at Beaver and San Francisco in-lieu of pedestrian barriers.**

- Install Four-Quadrant Gates at Beaver and San Francisco.
- Median used as Alternative Safety Measure at Enterprise.
- Install Four-Quadrant Gates at Steves and Fanning.

**Scenario D Creates a Quiet Zone with wayside horns at Steves and Fanning for cost savings.**

- Install pedestrian barriers at Beaver and San Francisco.
- Median used as Alternative Safety Measure at Enterprise.
- Install wayside Horns at Steves and Fanning.

**Scenario E Creates a quiet zone with wayside horns at Steves and Fanning with Four-Quadrant gates at Beaver and San Francisco.**

- Install Four-Quadrant Gates at Beaver and San Francisco.
- Median used as Alternative Safety Measure at Enterprise.
- Install wayside Horns at Steves and Fanning.

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## 6.0 CONCLUSION

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Staff/ Designer Conclusions:

- With the completion of the Diagnostic Team's investigation this concludes the study and analysis phase of this project, as mandated by FRA.
- City staff has taken the Diagnostic Team's recommendation and have come up with 5 scenario's to mitigate the potential safety concerns for the implementation of the Noise Mitigation or Quiet Zone project.
- The next recommended step is for the city to decide on which scenario they feel would best serve the general public and proceed toward final design and implementation.
- It is Gannett Fleming's opinion that the implementation of the wayside horns would best serve this project based on the conditions observed.

## APPENDIX A.9

### *Compilation of Pedestrian Devices In Use At Grade Crossings* *January 2008*

#### POINTS TO CONSIDER DURING DEVICE SELECTION

The selection of a traffic control device for use where pedestrians are intended to cross railroad tracks at grade should be the result of an engineering study whose simplicity or complexity will be determined by conditions at the crossing in question. In general, the factors to be examined during device selection should include the following:

- Collision experience, if any, at the crossing, as it involves pedestrians.
- Pedestrian volumes and peak flows, if any.
- Train speeds, numbers of trains, and railroad traffic patterns, if any.
- Sight distance that is available to pedestrians approaching the crossing.
- Skew angle, if any, of the crossing relative to the railroad tracks.

#### CONCLUSIONS

Based upon the information received during this compilation effort, it can be seen that effective devices are a necessary complement to law enforcement initiatives and public outreach and education efforts in the enhancement of pedestrian safety at grade crossings.

Observations of pedestrian behavior often reveal that many pedestrians do not think of themselves as part of the overall traffic stream, and therefore not really subject to traffic control devices. Their crossing behaviors often indicate an "I'll go when I want to; after all, I'm just walking" attitude that can prove very difficult to overcome. Effective use of channelizing devices that force pedestrians to look and move in certain directions and to cross tracks at certain places can enhance safety at grade crossings by accumulating pedestrian traffic and flowing that traffic through a single, well-designed crossing point. Many of the devices depicted in this compilation perform such a function, although often in different ways, and to varying degrees.

Another fact that becomes clear upon reviewing the devices compiled herein is that transit properties and local agencies have been developing their own signs, signals and pavement markings, which are frequently not in compliance with the MUTCD, the established national standard. Such non-standard devices are often not without merit, and may incorporate innovative features. Non-standard devices that have been shown to be effective in more than one geographic area through scientific evaluation studies should be proposed for inclusion in the MUTCD, as outlined in Section 1A.10 of the Manual. Inclusion in the Manual makes effective and innovative devices available for use by the wider community of transportation and engineering professionals, and can enhance safety for more of the population.

## APPENDIX C.1a

### U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 5/19/2009

Crossing No.: 025132G Update Reason: **Changed Crossing** Effective Begin-Date of Record: 08/17/06  
Railroad: **BNSF BNSF Rwy Co. [BNSF]** End-Date of Record:  
Initiating Agency **Railroad** Type and Position: **Public At Grade**

#### Part I Location and Classification of Crossing

Division: **SOUTHWEST** State: **AZ**  
Subdivision: **SELIGMAN** County: **COCONINO**  
Branch or Line Name: **E WINSL-NEEDLES** City: **In FLAGSTAFF**  
Railroad Milepost: **0344.16** Street or Road Name: **SAN FRANCISCO ST**  
Railroad I.D. No.: **7200** Highway Type & No.:  
Nearest RR Timetable Stn: **FLAGSTAFF** HSR Corridor ID:  
Parent Railroad: County Map Ref. No.: **35A**  
Crossing Owner: Latitude: **35.1968505**  
ENS Sign Installed: Longitude: **-111.6482409**  
Passenger Service: **AMTRAK** Lat/Long Source: **Actual**  
Avg Passenger Train Count: **2** Quiet Zone: **No**  
Adjacent Crossing with  
Separate Number:

#### Private Crossing Information:

Category: Public Access: **Unknown**  
Specify Signs: Specify Signals:

	ST/RR A	ST/RR B	ST/RR C	ST/RR D
Railroad Use:				
State Use:				
Narrative:				

Emergency Contact: **(800)832-5452** Railroad Contact: **(913)551-4540** State Contact:

#### Part II Railroad Information

Number of Daily Train Movements: Less Than One Movement Per Day: **No**  
Total Trains: **93** Total Switching: **0** Day Thru: **47**  
Typical Speed Range Over Crossing: From **1** to **45** mph Maximum Time Table Speed: **45**  
Type and Number of Tracks: Main: **2** Other: **1** Specify: **SIDING**  
Does Another RR Operate a Separate Track at Crossing? **No**  
Does Another RR Operate Over Your Track at Crossing? **Yes: ATK**



## APPENDIX C.1b

### U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing **025132G**

Continued

Effective Begin-Date of Record: **08/17/06**

End-Date of Record:

#### Part III: Traffic Control Device Information

**Signs:**

Crossbucks:	<b>4</b>	Highway Stop Signs:	<b>0</b>
Advanced Warning:	<b>Yes</b>	Hump Crossing Sign:	<b>No</b>
Pavement Markings:	<b>Stop Lines and RR Xing Symbols</b>	Other Signs:	<b>2</b>
			<b>0</b>
		Specify:	<b>DIRECTINAL</b>

**Train Activated Devices:**

Gates:	<b>2</b>	4 Quad or Full Barrier:	<b>Yes</b>
Mast Mounted FL:	<b>6</b>	Total Number FL Pairs:	<b>9</b>
Cantilevered FL (Over):	<b>1</b>	Cantilevered FL (Not over):	<b>0</b>
Other Flashing Lights:	<b>0</b>	Specify Other Flashing Lights:	
Highway Traffic Signals:	<b>0</b>	Wigwags:	<b>0</b>
Other Train Activated Warning Devices:		Bells:	<b>4</b>
Channelization:		Special Warning Devices Not Train Activated:	
Track Equipped with Train Signals?	<b>Yes</b>	Type of Train Detection:	<b>Constant Warning Time</b>
		Traffic Light Interconnection/Preemption:	<b>Advance Preemption</b>

#### Part IV: Physical Characteristics

Type of Development:	<b>Commercial</b>	Smallest Crossing Angle:	<b>60 to 90 Degrees</b>
Number of Traffic Lanes Crossing Railroad:	<b>3</b>	Are Truck Pullout Lanes Present?	<b>No</b>
Is Highway Paved?	<b>Yes</b>	If Other:	
Crossing Surface:	<b>Concrete</b>	Is it Signalized?	<b>Yes</b>
Nearby Intersecting Highway?	<b>76 to 200 feet</b>	Is Crossing Illuminated?	<b>No</b>
Does Track Run Down a Street?	<b>No</b>		
Is Commercial Power	<b>Yes</b>		

#### Part V: Highway Information

Highway System:	<b>Other FA Highway - Not NHS</b>	Functional Classification of Road at Crossing:	<b>Urban Collector</b>
Is Crossing on State Highway System:	<b>No</b>	AADT Year:	<b>2003</b>
Annual Average Daily Traffic (AADT):	<b>007978</b>	Avg. No of School Buses per Day:	<b>0</b>
Estimated Percent Trucks:			
Posted Highway Speed:	<b>0</b>		

U.S. DOT - CROSSING INVENTORY INFORMATION  
AS OF 5/24/2009

Crossing No.: 025133N Update Reason: Changed Crossing Effective Begin-Date of Record: 08/17/06  
Railroad: BNSF BNSF Rwy Co. [BNSF] End-Date of Record:  
Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	SOUTHWEST	State:	AZ
Subdivision:	SELIGMAN	County:	COCONINO
Branch or Line Name:	E WINSL-NEEDLES	City:	In FLAGSTAFF
Railroad Milepost:	0344.29	Street or Road Name:	BEAVER ST
RailRoad I.D. No.:	7200	Highway Type & No.:	FAU9023
Nearest RR Timetable Stn:	FLAGSTAFF	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	41
Crossing Owner:		Latitude:	35.1975351
ENS Sign Installed:		Longitude:	-111.6504212
Passenger Service:	AMTRAK	Lat/Long Source:	Actual
Avg Passenger Train Count:	2	Quiet Zone:	No
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category: Public Access: Unknown  
Specify Signs: Specify Signals:

ST/RR A ST/RR B ST/RR C ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)832-5452 Railroad Contact: (913)551-4540 State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 93 Total Switching: 0	Day Thru:	47
Typical Speed Range Over Crossing: From 1 to 45 mph	Maximum Time Table Speed:	45
Type and Number of Tracks: Main: 2 Other: 0	Specify:	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	Yes: ATK	

C  
APPENDIX 2a

# U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 025133N

Continued

Effective Begin-Date of Record: 08/17/06

End-Date of Record:

## Part III: Traffic Control Device Information

### Signs:

Crossbucks: 4  
Advanced Warning: Yes  
Pavement Markings: Stop Lines and RR Xing Symbols

Highway Stop Signs: 0  
Hump Crossing Sign: No  
Other Signs: 2 Specify: 3 TRACKS  
2 OTHRSTPSGN

### Train Activated Devices:

Gates: 2  
Mast Mounted FL: 4  
Cantilevered FL (Over): 2  
Other Flashing Lights: 0  
Highway Traffic Signals: 0  
Other Train Activated Warning Devices:  
Channelization:  
Track Equipped with Train Signals? Yes

4 Quad or Full Barrier: Yes  
Total Number FL Pairs: 9  
Cantilevered FL (Not over): 0  
Specify Other Flashing Lights:  
Wigwags: 0 Bells: 4  
Special Warning Devices Not Train Activated:  
Type of Train Detection: Constant Warning Time  
Traffic Light Advance Preemption  
Interconnection/Preemption:

## Part IV: Physical Characteristics

Type of Development: Commercial  
Number of Traffic Lanes: 2  
Crossing Railroad:  
Is Highway Paved? Yes  
Crossing Surface: Concrete  
Nearby Intersecting Highway? Less than 75 feet  
Does Track Run Down a Street? No  
Is Commercial Power Yes

Smallest Crossing Angle: 60 to 90 Degrees  
Are Truck Pullout Lanes Present? No  
If Other:  
Is it Signalized? Yes  
Is Crossing Illuminated? No

## Part V: Highway Information

Highway System: Other FA Highway - Not NHS  
Is Crossing on State Highway System: No  
Annual Average Daily Traffic (AADT): 007642  
Estimated Percent Trucks: 40  
Posted Highway Speed: 0

Functional Classification of Road at Crossing: Urban Collector  
AADT Year: 2003  
Avg. No of School Buses per Day: 0

C  
APPENDIX 2b

# APPENDIX C.3a

## U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 5/19/2009

Crossing No.: **025099J** Update Reason: **Changed Crossing** Effective Begin-Date of Record: **08/01/07**  
 Railroad: **BNSF BNSF Rwy Co. [BNSF]** End-Date of Record:  
 Initiating Agency **Railroad** Type and Position: **Public At Grade**

### Part I Location and Classification of Crossing

Division:	<b>SOUTHWEST</b>	State:	<b>AZ</b>
Subdivision:	<b>SELIGMAN</b>	County:	<b>COCONINO</b>
Branch or Line Name:	<b>E WINSL-NEEDLES</b>	City:	<b>In FLAGSTAFF</b>
Railroad Milepost:	<b>0341.19</b>	Street or Road Name:	<b>STEVES BLVD.</b>
RailRoad I.D. No.:	<b>7200</b>	Highway Type & No.:	
Nearest RR Timetable Str:	<b>FLAGSTAFF</b>	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	<b>S40</b>
Crossing Owner:		Latitude:	<b>35.2102941</b>
ENS Sign Installed:		Longitude:	<b>-111.6048873</b>
Passenger Service:	<b>AMTRAK</b>	Lat/Long Source:	<b>Actual</b>
Avg Passenger Train Count:	<b>2</b>	Quiet Zone:	<b>No</b>
Adjacent Crossing with Separate Number:			

#### Private Crossing Information:

Category:	Public Access:	<b>Unknown</b>
Specify Signs:	Specify Signals:	
ST/RR A	ST/RR B	ST/RR C
ST/RR D		
Railroad Use:		
State Use:		
Narrative:		

Emergency Contact: **(800)832-5452** Railroad Contact: **(913)551-4540** State Contact:

### Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	<b>No</b>
Total Trains: <b>93</b>	Total Switching: <b>0</b>	Day Thru: <b>47</b>
Typical Speed Range Over Crossing: From <b>1</b> to <b>55</b> mph	Maximum Time Table Speed:	<b>55</b>
Type and Number of Tracks: Main: <b>2</b> Other <b>0</b>	Specify:	
Does Another RR Operate a Separate Track at Crossing?	<b>No</b>	
Does Another RR Operate Over Your Track at Crossing?	<b>Yes: ATK</b>	

## APPENDIX C.3b

### U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing **025099J**

Continued

Effective Begin-Date of Record: **08/01/07**

End-Date of Record:

#### Part III: Traffic Control Device Information

##### Signs:

Crossbucks: **2**  
Advanced Warning: **Yes**  
Pavement Markings: **RR Xing Symbols**

Highway Stop Signs: **0**  
Hump Crossing Sign: **No**  
Other Signs: **1** Specify: **W/O 2**  
**1** **DIRECTIONAL**

##### Train Activated Devices:

Gates: **2**  
Mast Mounted FL: **2**  
Cantilevered FL (Over): **2**  
Other Flashing Lights: **0**  
Highway Traffic Signals: **0**  
Other Train Activated  
Warning Devices:  
Channelization:  
Track Equipped with **Yes**  
Train Signals?

4 Quad or Full Barrier: **No**  
Total Number FL Pairs: **8**  
Cantilevered FL (Not over): **0**  
Specify Other Flashing Lights:  
Wigwags: **0** Bells: **2**  
Special Warning Devices Not  
Train Activated:  
Type of Train Detection: **DC/AFO**  
Traffic Light **Simultaneous Preemption**  
Interconnection/Preemption:

#### Part IV: Physical Characteristics

Type of Development: **Commercial**  
Number of Traffic Lanes **4**  
Crossing Railroad:  
Is Highway Paved? **Yes**  
Crossing Surface: **Concrete**  
Nearby Intersecting  
Highway? **76 to 200 feet**  
Does Track Run Down a  
Street? **No**  
Is Commercial Power **Yes**

Smallest Crossing Angle: **60 to 90 Degrees**  
Are Truck Pullout Lanes Present? **No**  
If Other:  
Is it Signalized? **Yes**  
Is Crossing Illuminated? **No**

#### Part V: Highway Information

Highway System: **Other FA Highway - Not NHS**  
Is Crossing on State  
Highway System: **No**  
Annual Average Daily  
Traffic (AADT): **011028**  
Estimated Percent Trucks: **05**  
Posted Highway Speed: **0**

Functional Classification of  
Road at Crossing: **Urban Collector**  
AADT Year: **2002**  
Avg. No of School Buses per Day: **0**



## APPENDIX C.3c

### U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 5/19/2009

Crossing No.: 025099J      Update Reason: **Changed Crossing**      Effective Begin-Date of Record: 11/17/04  
Railroad: **BNSF BNSF Rwy Co. [BNSF]**      End-Date of Record: 10/18/05  
Initiating Agency **State**      Type and Position: **Public At Grade**

#### Part I Location and Classification of Crossing

Division:	<b>SOUTHWEST</b>	State:	<b>AZ</b>
Subdivision:	<b>SELIGMAN</b>	County:	<b>COCONINO</b>
Branch or Line Name:	<b>E WINSL-NEEDLES</b>	City:	<b>In FLAGSTAFF</b>
Railroad Milepost:	<b>0341.19</b>	Street or Road Name:	<b>STEVES BLVD.</b>
RailRoad I.D. No.:	<b>7200</b>	Highway Type & No.:	
Nearest RR Timetable Stn:	<b>FLAGSTAFF</b>	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	<b>S40</b>
Crossing Owner:		Latitude:	<b>35.2102941</b>
ENS Sign Installed:		Longitude:	<b>-111.6048873</b>
Passenger Service:	<b>AMTRAK</b>	Lat/Long Source:	<b>Actual</b>
Avg Passenger Train Count:	<b>2</b>	Quiet Zone:	<b>No</b>
Adjacent Crossing with Separate Number:			

#### Private Crossing Information:

Category:      Public Access: **Unknown**  
Specify Signs:      Specify Signals:

	ST/RR A	ST/RR B	ST/RR C	ST/RR D
Railroad Use:				
State Use:				
Narrative:				

Emergency Contact: **(800)832-5452**      Railroad Contact:      State Contact:

#### Part II Railroad Information

Number of Daily Train Movements:		Less Than One Movement Per Day:	<b>No</b>
Total Trains:	<b>87</b>	Total Switching:	<b>0</b>
Typical Speed Range Over Crossing: From <b>1</b> to <b>79</b> mph		Day Thru:	<b>44</b>
Type and Number of Tracks: Main: <b>2</b> Other: <b>0</b>		Maximum Time Table Speed:	<b>79</b>
		Specify:	
Does Another RR Operate a Separate Track at Crossing?			<b>No</b>
Does Another RR Operate Over Your Track at Crossing?			<b>Yes: ATK</b>

# APPENDIX C.3d

## U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing **025099J**

Continued

Effective Begin-Date of Record: **11/17/04**

End-Date of Record: **10/18/05**

### Part III: Traffic Control Device Information

#### Signs:

Crossbucks: **2**  
Advanced Warning: **Yes**  
Pavement Markings: **RR Xing Symbols**

Highway Stop Signs: **0**  
Hump Crossing Sign: **No**  
Other Signs: **1** Specify: **W/O 2**  
**1** **DIRECTIONA**

#### Train Activated Devices:

Gates: **2**  
Mast Mounted FL: **2**  
Cantilevered FL (Over): **2**  
Other Flashing Lights: **0**  
Highway Traffic Signals: **0**  
Other Train Activated  
Warning Devices:  
Channelization:  
Track Equipped with **Yes**  
Train Signals?

4 Quad or Full Barrier: **No**  
Total Number FL Pairs: **8**  
Cantilevered FL (Not over): **0**  
Specify Other Flashing Lights:  
Wigwags: **0** Bells: **2**  
Special Warning Devices Not  
Train Activated:  
Type of Train Detection: **Motion Detectors**  
Traffic Light **Simultaneous Preemption**  
Interconnection/Preemption:

### Part IV: Physical Characteristics

Type of Development: **Commercial**  
Number of Traffic Lanes **4**  
Crossing Railroad:  
Is Highway Paved? **Yes**  
Crossing Surface: **Concrete**  
Nearby Intersecting  
Highway? **76 to 200 feet**  
Does Track Run Down a  
Street? **No**  
Is Commercial Power **Yes**

Smallest Crossing Angle: **60 to 90 Degrees**  
Are Truck Pullout Lanes Present? **No**  
If Other:  
Is it Signalized? **Yes**  
Is Crossing Illuminated? **No**

### Part V: Highway Information

Highway System: **Other FA Highway - Not NHS**  
Is Crossing on State  
Highway System: **No**  
Annual Average Daily  
Traffic (AADT): **011028**  
Estimated Percent Trucks: **05**  
Posted Highway Speed: **0**

Functional Classification of  
Road at Crossing: **Urban Collector**  
AADT Year: **2002**  
Avg. No of School Buses per Day: **0**